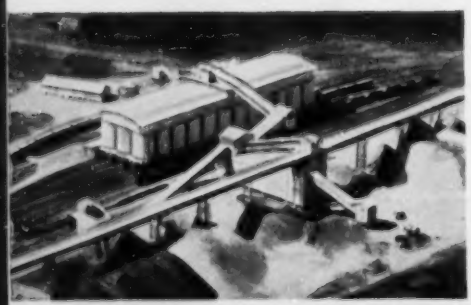
COMMERCIAL FERTILIZER

CONSOLIDATED WITH THE FERTILIZER GREEN BOOK

Three of the A.A.C. Co's electrically-operated draglines at work at our phosphate mines in Central Florida. Bucket capacities range from 9½ to 17 cubic yards. The 17-yard draglines with their 175-foot booms each weigh more than a million and a half pounds and can move 35,000 tons of material in 24 hours. From these rock deposits flow a continuous stream of high quality phosphate rock, assuring a dependable source of supply of AA QUALITY phosphorus products, see list below.

AA Quality...

for over 85 years a symbol of quality and reliability



From the air—wet rock storage and drying plant, with dry rock storage silos in background. These silos, 29 in number, have a total capacity of 40,000 tons of dried rock. Under the silos are four runways where 40 railroad cars can be loaded at a time.

principal AA QUALITY products

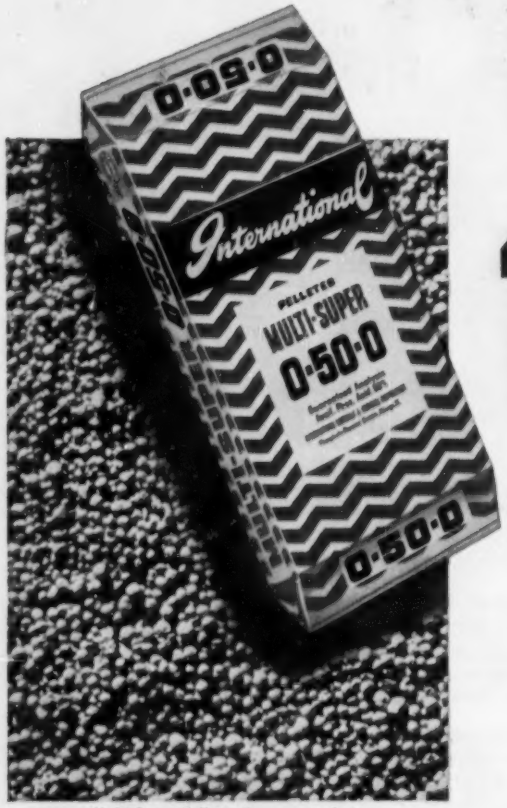
All grades of Florida Pebble Phosphate Rock
AA QUALITY Ground Phosphate Rock
All grades of Complete Fertilizers **Superphosphate**
Gelatin **Bone Products** **Salt Cake** **Ammonium Carbonate**
Sulphuric Acid **Fluosilicates** **Insecticides and Fungicides**
Phosphoric Acid and Phosphates
Phosphorus and Compounds of Phosphorus

THE AMERICAN AGRICULTURAL CHEMICAL COMPANY

GENERAL OFFICE: 50 CHURCH STREET, NEW YORK 7, N. Y.

30 FACTORIES AND SALES OFFICES, SERVING U.S., CANADA AND CUBA—ASSURE DEPENDABLE SERVICE

Announcing two new, special-phosphate fertilizer

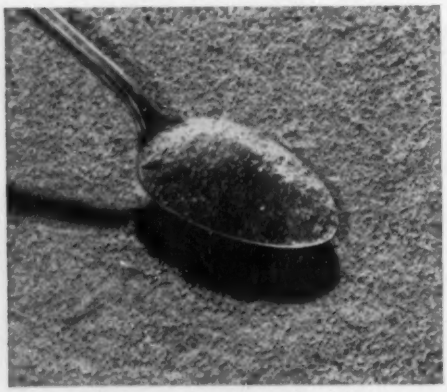


Multi-Super Pellets, shown actual size

1 For direct application
0-50-0 Multi-Super Pellets

Here's a unique high-potency, high-quality phosphate — "pelleted" to meet special on-the-farm needs today. New Multi-Super is free flowing. Its exclusive BB-sized granules won't bridge or clog spreading equipment. Multi-Super is acid free, too. Doesn't react with bag linings. Retains full strength in storage. Saves 8-10% in freight, storage and handling costs.

Already widely proven under actual farm conditions, Multi-Super is ideal wherever phosphorus deficiencies exist — for side dressing corn, for wheat, oat and rice fields and for applying on deficient range pastures by airplane. Multi-Super guarantees not less than 50% phosphoric acid — assures easier, faster spreading, plus greater crop yield power for every pound.



Fine texture eliminates grinding before mixing; ammoniates readily

2 For mixing and ammoniation
Triple Superphosphate

New Triple Superphosphate is an important fertilizer manufacturing product that saves both time and money. Its fine, "powdery" but dust-free texture eliminates the need to grind before mixing; assures faster and more complete ammoniation. Triple Superphosphate runs approximately 46% A.P.A. Proper conditioning prevents setting up in shipment.

International's extensive plant expansion assures adequate production facilities for both of these new fertilizer products, now available for immediate delivery to you. Write or wire now for samples and quotations.

INTERNATIONAL MINERALS

Phosphate Chemicals Division

purpose products

Simple test shows superior ***FREE FLOWING*** *qualities of new Multi-Super Phosphate. Note freedom from bridging and clogging.*

& CHEMICAL CORPORATION

General Offices: 20 North Wacker Drive, Chicago 6

COMMERCIAL FERTILIZER

ESTABLISHED 1910

December, 1954

Volume 89 No. 6

ADVERTISING INDEX

Published Monthly by
WALTER W. BROWN PUBLISHING CO., INC.
75 Third St. N. W., Atlanta, Georgia Phone Atwood 4160

ERNEST H. ABERNETHY, *President*
BRUCE MORAN, *Editor* CLAY W. PENICK, *Managing Editor*
V. T. CRENSHAW, *Business Manager*

Subscription rates: United States, $3.00 per year; 5 years, $12.00. Foreign $5.00 per year.

In This Issue

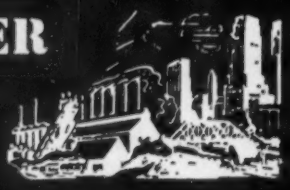
Address all correspondence to Atlanta Publishing Offices, sending direct to: COMMERCIAL FERTILIZER, 75 Third St., N. W., Atlanta, Georgia.

Chicago Representative
ELON A. ABERNETHY
1200 N. Ashland Ave.—Room 544
Phone CApitol 7-4111

West Coast Representative
M. A. CALDWELL
2267 W. 24th St., Los Angeles, Cal.
Phone REPUBLIC 1-3050

COMMERCIAL FERTILIZER, entered as second class matter, October 12, 1910, at the post office at Atlanta, under the Act of March 3, 1879. Published monthly except semi-monthly in September, by Walter W. Brown Publishing Co., Inc., 75 Third St., N. W., Atlanta, Georgia.

JUST AROUND THE CORNER



By Vernon Mount

A 500 BILLION ECONOMY IN 10 YEARS. Truman said it when he left office. Eisenhower said it recently. Both parties are definitely on record as aiming at that figure as a goal for 1965; it has become a bi-partisan thing.

THE BIGGEST "DEAL" OF ALL is ahead. Bigger than the New Deal or the Fair Deal. Spending will be stepped up and taxes will be cut. And the two seemingly opposite forces will be reconciled by the fact that the people will make more money, and so can cheerfully pay lower rates on higher incomes.

THE WORK WEEK WILL SHORTEN so people can live better and have more fun for themselves and with their children. Family ties will be strengthened, and many of the problems of the young will vanish as this solidarity develops. And of course the shorter work week will take care of the jobs for the big increase in population which now wars with the science of automation.

SMILE IF YOU WILL, but we are on the way. There is nothing so remarkable about all this. We have been on the way for many years. These figures are only a projection of the curve which has steadily climbed almost since the turn of the century.

Yours faithfully,

Vernon Mount

Grace Nitrogen can put

$100,000,000

into the American farmer's pocket

How? Grace Chemical's $20,000,000 plant, opening soon in Memphis, Tennessee, will produce 72,000 tons of nitrogen a year as urea and anhydrous ammonia. That's enough nitrogen to increase the nation's corn crop by 72 million bushels. At 1954 prices, that would put an extra $100,000,000 or more into the pockets of the American farmer.

Corn is only one example. Actually, there will be many applications for this nitrogen: as fertilizer for other feed and fiber crops; as a protein source for feed supplements; for industrial uses such as the manufacture of plastics, synthetic fibers, pharmaceuticals, and in petroleum refining.

The Memphis plant's output provides agriculture and industry a dependable source, backed by a World of Experience.

FOR UREA AND AMMONIA LOOK TO

A WORLD OF EXPERIENCE

GRACE CHEMICAL COMPANY

HANOVER SQUARE, NEW YORK, N.Y. • ATLANTA, GA. • CHICAGO, ILL. • MEMPHIS, TENN.

"A Short Horse Is Soon Curried"

In Albemarle's completely integrated Multiwall operation small orders look as "well groomed", receive as careful attention as the big jobs. Color printing? Colored Kraft? "A horse of another color"... but they are Albemarle specialties too.

FOR *Multiwall* CALL Albemarle

ALBEMARLE PAPER MANUFACTURING COMPANY • RICHMOND, VIRGINIA

EASTERN SALES OFFICE: NEW YORK CITY • SOUTHERN SALES OFFICE: BALTIMORE, MD. • MIDWEST SALES OFFICE: CHICAGO, ILLINOIS

PAY DIRT

for pottery or pumpkins

In 1862, when John W. Searles, a prospector, staked mining claims on Searles Lake in California's Mojave Desert, he little knew he had discovered the richest natural deposit of *diversified* chemicals the world has ever known. In ensuing years triumphs in chemical engineering have enabled American Potash and Chemical Corporation to win from this vast dry lake bed millions of tons of basic chemicals vital to twentieth century life... POTASH, one of the three plant foods necessary to maintain our agricultural economy, BORAX, BORIC ACID, SODA ASH, SALT CAKE, BROMINE and LITHIUM CARBONATE used in the manufacture of glassware, ceramics, paper, enamelware and a countless array of consumer products. Constant improvement of the company's manufacturing processes at Trona, coupled with enlarged and modern research and development facilities, guarantee you a uniform and high quality source of supply.

American Potash & Chemical Corporation

TRONA
INDUSTRIAL AND AGRICULTURAL CHEMICALS

ESTON CHEMICALS

Offices ● 3030 West Sixth Street, Los Angeles 54, California
● 99 Park Avenue, New York 16, New York
● 214 Walton Building, Atlanta 3, Georgia

Plants ● Trona and Los Angeles, California

• BORAX • POTASH • SODA ASH • SALT CAKE • LITHIUM & BROMINE CHEMICALS
and a diversified line of specialized AGRICULTURAL, REFRIGERANT and INDUSTRIAL CHEMICALS

more and more
granulated
fertilizer manufacturers
are turning to

LOUISVILLE rotary dryers rotary coolers

to speed production ... reduce drying costs

Installations are individually engineered for your problems. Results can be pre-determined in our pilot plant. We'll be glad to show you how the fertilizer industry has found a new way to efficient and profitable drying.

A Louisville engineer will survey your present operation without obligation on your part. Take advantage of Louisville's equipment and experience. Phone or write today.

PROCESS EQUIPMENT DIVISION
GENERAL AMERICAN
TRADE MARK

Over 50 years of creative drying engineering

GENERAL AMERICAN TRANSPORTATION CORPORATION

Dryer Sales Office: 380 Madison Avenue, New York 17, New York
139 South Fourth Street, Louisville 2, Kentucky
General Offices: 135 South LaSalle Street, Chicago 90, Illinois
In Canada: Canadian Locomotive Company, Ltd., Kingston, Ontario
Offices in all principal cities

TOP: Model HAH "PAYLOADER" dumping its load of material into a conveyor.
BOTTOM: The same unit with Crane Hook carries barrels of metal pieces through doorways and narrow aisles.

Making DOLLARS
in small quarters . . .

Here's how to move materials profitably in cramped quarters. This Model HAH "PAYLOADER" tractor-shovel scoops up more than a ton of bulk materials at a time, carries it swiftly over smooth or rough ground and can dump it over bin or truck sides 8 feet high. Quickly-installed attachments like fork lift and crane hook also enable it to do many other material-handling jobs.

Short wheel base and rear-wheel power steer are what make it so maneuverable. Three-speed full-reversing transmission and torque converter drive insure precise, simple control and fast, profitable operation.

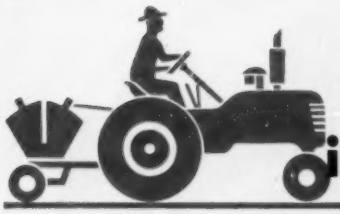
This "PAYLOADER" is one of a complete line of seven tractor-shovels with bucket capacities from 12 cu. ft. to 2 cu. yd. including rear-wheel and front-wheel drive models and big, powerful 4-wheel-drive types.

Every "PAYLOADER" is a proven machine with thousands in service — built by Hough, the pioneer and leader in tractor-shovel development — sold and serviced by 160 outstanding Distributors throughout the U.S.A. and Canada. Find out what a "PAYLOADER" can do for you. Your Distributor will be glad to demonstrate. The Frank G. Hough Co., 702 Sunnyside Ave., Libertyville, Ill.

JOB STUDIES

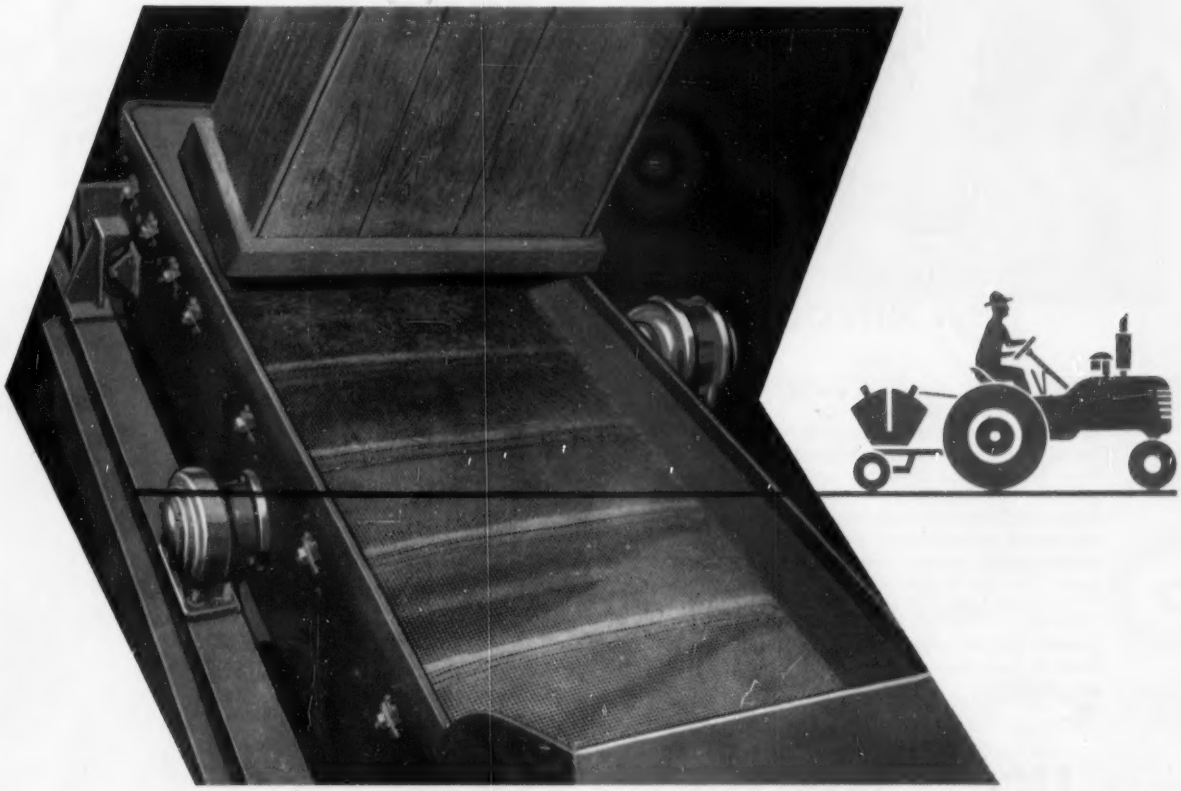
Are available with detailed performance of "PAYLOADER" tractor-shovels in a variety of industries. Write for copies — no obligation.

PAYLOADER®
THE FRANK G. HOUGH CO. · LIBERTYVILLE, ILL.
SUBSIDIARY—INTERNATIONAL HARVESTER COMPANY



two SIMPLICITY gyrating screens team up to speed basing operations in fertilizer production

Two Simplicity Gyrating Screens keep operations humming at this large Southern fertilizer plant. Working as a team, they handle the output of two 14" x 7" bucket elevators. A 3' x 8' Model "LS" Simplicity Single Deck Screen handles as much as 50 tons of super phosphate per hour; and a 3' x 6' Model "C" Simplicity Single Deck Screen handles all other fertilizer ingredients at about the same rate of speed. Both screens are set at 20° and rotate with the flow of materials. There is virtually no blinding, as the screen in the photo, which has not been brushed or cleaned, shows. The splendid performance of this Simplicity team is typical of the fine job Simplicity Screens are doing throughout the fertilizer industry. They can help speed up operations and increase production in your plant, too. Write us today for complete information.



118

- Sales representatives in all parts of the U. S. A.
- FOR CANADA: Canadian Bridge Engineering Co., Ltd., Walkerville, Ontario
- FOR EXPORT: Brown and Sites, 50 Church Street, New York 7, New York

Simplicity
TRADE MARK REGISTERED

ENGINEERING COMPANY • DURAND, MICHIGAN

This year there will be heavier-than-usual demand for NITROGEN for <u>early</u> spring application

Here's why: Many states are actively promoting pasture-building programs this year. The basic prescription for such programs will follow the present trend to high-nitrogen fertilizing. Agricultural college demonstrations—and actual experience—are showing more and more farmers how extra nitrogen brings high profit return from pastures, grass crops and small grains. These developments should definitely result in record demand for nitrogen this year. Will you be ready?

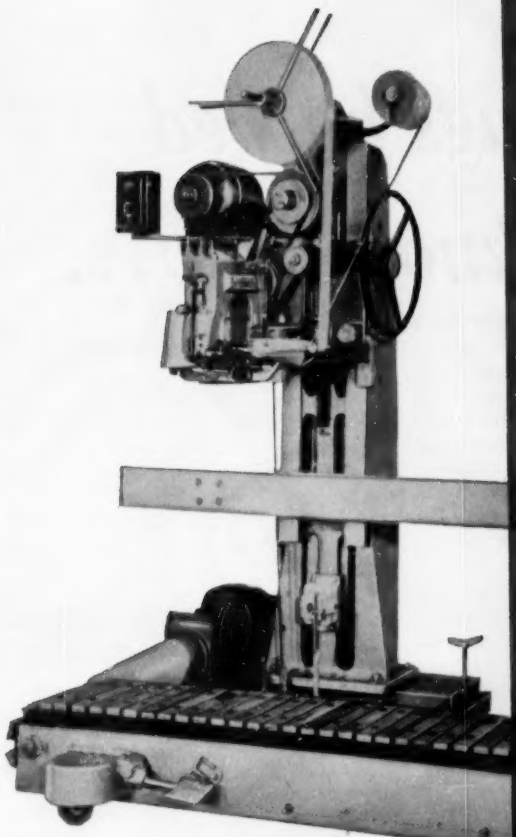
An important feature of the widespread promotion will be *earlier application*—for earlier grass growth and a longer grazing season. That means that all your dealers must be well stocked as early as possible.

But don't forget that late winter or early spring high-nitrogen top dressing or broadcast and plow down calls for nitrogen in the non-leaching Ammonia form. So to give your customers top nitrogen value, sell them USS Ammonium Sulphate both in mixed fertilizers and for direct application . . . it will not leach out of the soil even during heavy spring rains.

USS Ammonium Sulphate is an easy mixer. It is carefully kiln-dried so that it stays free-flowing. It's available in moistureproof 100-pound bags or in bulk quantities for mixing. Order your supply of USS Ammonium Sulphate *now* so you can be sure of quickest delivery. Don't be caught with your stocks down when the big orders start coming.

USS AMMONIUM SULPHATE

UNITED STATES STEEL



model ET Bagpaker®

tapes and sews

15 bags per minute

TAKE ADVANTAGE OF THESE 5 MODEL ET BAGPAKER FEATURES:

- One operator finishes 15 bags a minute when filled bags are delivered continuously to the conveyor
- Adjusts to bags from 25 to 100 lb. capacity
- Caster-mounted, the Model ET is easily moved to widely separated packaging stations
- Bag starts and stops sewing head when equipped with automatic sewing head control
- Automatic brake on Howpner No. 150 Heavy Duty sewing unit prevents "coasting"

Here's the perfect teammate for your present filling and weighing equipment—the most efficient way to get better protection and faster packaging at the lowest possible cost.

Here's how the Model ET Bagpaker works: One operator receives bags from your weighing and filling machine. In four seconds or less the Bagpaker has applied creped "kraft" sealing tape over the bag end, sewn a reinforced "cushion stitch" through both tape and bag, and trimmed the tape. You can't beat that for efficiency and speed.

Booklet ET gives you complete details and dimensional drawings, shows you how perfectly Model ET fits into your existing filling set-up. There's no obligation—just write to:

International Paper Company, Bagpak Division
220 E. 42 Street, New York 17

International Paper COMPANY

BAGPAK DIVISION

BRANCH OFFICES: Atlanta · Baltimore · Boston · Chicago · Cincinnati · Cleveland · Dallas · Denver · Des Moines · Detroit · Joplin · Kansas City, Kansas · Los Angeles Minneapolis · New Orleans · Philadelphia · Pittsburgh · St. Louis · San Francisco · IN CANADA: The Continental Paper Products, Ltd., Montreal, Ottawa, Toronto

the multiwall bags backed by 107 years of know-how . . .

CHASE Multiwalls

Call on your "C"-Man, your Chase representative. You can't put your problems in more capable hands. You can't put your products in better bags.

Sewn valve, sewn open mouth, pasted valve, pasted open mouth

FOR SAMPLES AND CURRENT PRICES, WRITE DEPARTMENT 19-L.

SINCE 1847

CHASE BAG COMPANY

General Sales Office: 309 West Jackson Blvd., Chicago 6, Illinois

30 BRANCHES AND SALES OFFICES—STRATEGICALLY LOCATED

Less Tonnage But More Plant Food in 1953-54

American farmers used a slightly smaller tonnage of fertilizer in the year ending July 1, 1954, than in the previous 12 months, The National Fertilizer Association announced November 10.

Association officials point out, however, that consumption of the plant foods—the active ingredients in fertilizer — probably was somewhat greater in 1953-54 than during the previous year, thus setting a new all-time record. This is because of the trend toward greater availability of materials containing a higher concentration of the plant food elements.

Total consumption in the United States of all kinds of fertilizer during 1953-54 was 20,290,549 tons as compared with 20,603,448 tons in 1952-53. This represents a decrease in tonnage of 1.5 percent.

The apparent leveling-off of fertilizer consumption this last year is attributed by the Association to various factors including drought over wide areas of the country, planting restrictions on major crops, and reduced farm income due to lower prices for farm commodities.

	1952-53	1953-54
New England	430,282	404,565
Middle Atlantic	1,543,639	1,476,000
East North Central	4,193,512	4,089,631
West North Central	1,804,876	2,013,303
South Atlantic	6,941,602	6,655,582
South Central	4,334,752	4,229,948
Western	1,354,785	1,421,520
UNITED STATES	20,603,448	20,290,549

Regionally, consumption on a tonnage basis increased only in the West North Central and far Western areas. The South Atlantic region, with the largest total consumption, showed the greatest decrease tonnage-wise with a drop of nearly 300,000 tons, or about 4 percent. Consuption in the West North Central region was over 200,000 tons, or 11.5 percent, greater than a year earlier.

Oklahoma A.&M. Laboratory Opens

Oklahoma A.&M. College, Stillwater, Okla., opened its new Radioisotopes and Radiations Laboratory for agricultural research November 9. Dr. C. L. Comar, principal scientist of the medical division of the Oak Ridge (Tenn.) Institute of Nuclear Studies, attended the opening. Scientists who will do initial work in the $30,000 laboratory have been trained at Oak Ridge and Argonne National Laboratories, Lemont, Ill., said Dr. Roy M. Chatters, installation co-ordinator.

NFA Publishes Traffic Book

NFA has just released the History of Interstate Commerce Commission Prescribed or Approved Rates on Fertilizer, Fertilizer Materials and Phosphate Rock for your information and use by your traffic department.

Prepared at the request of NFA's Traffic Committee, by John Money, traffic counsel, this brief, historical resume of the principal proceedings before the Interstate Commerce Commission can be of great benefit to you. As Mr. Money says in the foreword, "It is believed that a better understanding of the various prescribed rate structures can be obtained by analyzing them in the general order in which they were prescribed or approved in the different rate territories."

It Seems to Me

by BRUCE MORAN

It seems to me that one of the most important things that has been said recently for the benefit of the fertilizer industry was contained in the talk Spencer's Joe Culpepper made at the Pacific Northwest meeting. Joe thinks, and I agree with him, that we have been missing the boat in not presenting our product in this light:

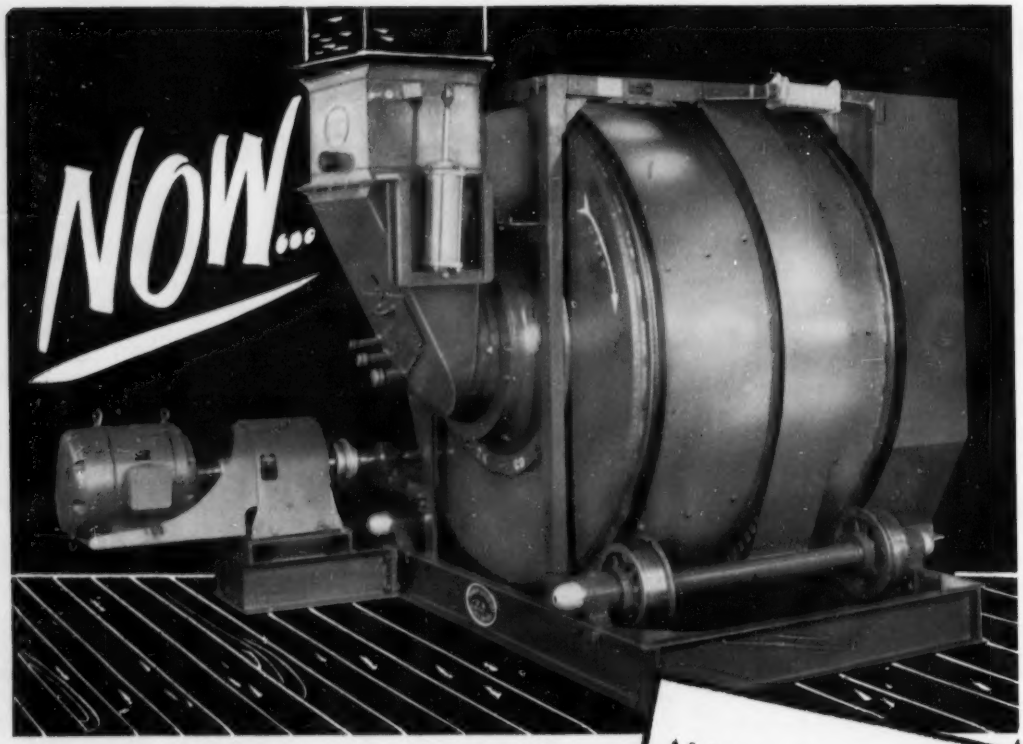
It cuts the cost of food production
It can lower the cost to the consumer
So . . . it can benefit everybody

Three very simple sentences, but of terrific impact when you consider how much they mean now, and how much more they could mean if farmers took the advice of their Land Grant Colleges and let fertilizer do the things we all know it can do.

And that's what Joe meant when he said we were not by any means developing the full potential of the basic, vital product we offer our communities. We are facing a time when selling may be hard going in the drought-ridden areas. Fertilizer is the answer to the rehabilitation of many a farmer this year. When we sell, let's remember Joe's simple formula, and put it to work helping the dealer put our fertilizer to work helping the farmer.

INDUSTRY CALENDAR

Date	Organization	Place	City
Jan. 5-7	Northeastern Weed Control	Hotel New Yorker	New York, N. Y.
Jan. 17-19	Southern Weed Conference	Hotel Soreno	St. Petersburg, Fla.
Feb. 17-18	Midwest Soil Conference	Palmer House	Chicago, Ill.
Feb. 27-28	Southern Fertilizer Safety		New Orleans, La.
Mar. 7-9	NACA	Chase-Park Plaza	St. Louis, Mo.
June 28-30	Pacific N.W. Conference		Boise, Idaho



the D-K Mixer

A new addition to the Davidson-Kennedy line of fertilizer machinery is the D-K Mixer. Available in one-half, one and two ton capacities, it is of sturdy, heavy-duty construction with high carbon, high wear resistant steel plate. Mixer flights consist of special alloy steel plates arranged to give complete mixing of dry and semi-dry materials in the shortest possible cycle. The new D-K Mixer, typical of all Davidson-Kennedy fertilizer equipment, will perform efficiently and economically and give a lifetime of trouble-free service. Write today for complete information.

- Sealed mixing unit contains self take-up neoprene seal in inlet.
- Wheel bearings are sealed to keep grease in and dust out. Lubrication fittings are stationary and easily accessible.
- Direct drive is connected with flexible coupling to totally enclosed fan cooled motor. (optional)
- Charge and discharge gates are hand operated or air operated. (optional)
- Ample clean-out doors and manhole are provided for access to mixer drum.
- One ton mixer requires only 90" x 82" floor space.

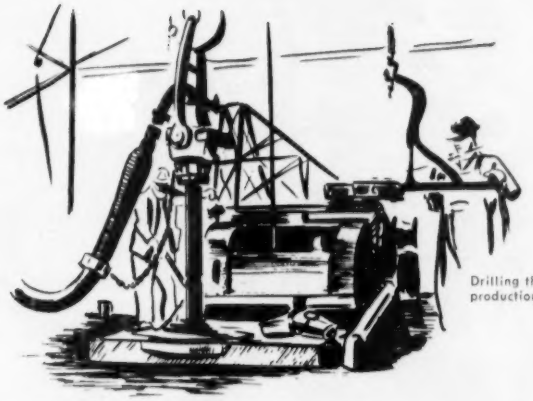
Complete fertilizer design, engineering, fabrication and construction supervision service.

Hopper systems Automatic solution tanks Vibrating screens Pulverizers Clod breakers Elevators Conveyors Mixers

DAVIDSON-KENNEDY CO.

ATLANTA D-K GEORGIA

U.S.A.



Drilling the production wells

Crude Sulphur

for Industrial Use

from the properties of

Texas Gulf Sulphur Co.

75 East 45th Street • New York 17, N. Y.

Producing Units

- **NEWGULF, TEXAS**
- **MOSS BLUFF, TEXAS**
- **SPINDLETOP, TEXAS**
- **WORLAND, WYOMING**

CF STAFF—COMPILED TONNAGE REPORTS

FERTILIZER TONNAGE REPORTS (in equivalent short tons)
Compiled by COMMERCIAL FERTILIZER Staff

	October		September	August	July-Aug.-Sept. Quarter		Year
State	1954	1953	1954	1954	1954	1953	1953-54
Alabama	.....	.....	45,520[1]	17,931[1]	77,244	64,373	1,087,763
Arkansas	16,471[1]	*	11,649[1]	5,303[1]	22,882[2]	*	366,225
Georgia	36,258	41,037	11,784	13,103	63,391	68,745	1,361,254
Louisiana	24,535	14,033	11,823	6,390	25,153	31,792	316,757
Missouri	83,927	60,694	83,912	52,738	147,678	140,041	756,457
N. Carolina	80,948	85,344	41,805	20,377	71,387	75,361	1,815,572
Oklahoma	21,914	14,601	19,084	8,238	30,201	47,269	144,367
S. Carolina	25,780	35,390	20,722	11,033	40,477	70,650	939,678
Tennessee	53,127	29,505	19,435	9,921	52,612	52,654	523,300
Texas	87,720	42,147	36,139	12,688	63,098	79,612	562,530
California		(reports submitted quarterly)			141,875	.....	830,327
Indiana		(reports submitted quarterly)			.....	.....	1,180,091
Virginia		(reports submitted quarterly)			77,959	80,445	780,931
TOTAL	414,209	322,751	244,704	134,488	791,075	865,113	10,665,252

* Not Compiled [1] Omitted from column total to allow comparison. ..... (Not yet reported)

MARKETS

ORGANICS: Organics for fertilizer use are in strong demand and the market exceedingly tight. Producers of domestic Nitrogenous are heavily sold with several unable to accept additional business through June, 1955. Last price paid was $4.00 per unit of Ammonia, bulk, f.o.b. midwestern production point.

CASTOR POMACE: It is reported that prices of as high as $35.00 per ton have been offered to the New Jersey producers, but because of the tight supply situation such bids have been turned down. Practically all shipments now are against contracts through the end of 1954 and no offerings for 1955 are in the market. Western Castor Pomace, in very limited quantity is reported sold at prices in excess of $26.00 per ton bulk f.o.b. Texas point. The domestic production of Castor Pomace from the Texas/Oklahoma area is expected to be very small.

BLOOD: This market is somewhat easier due to slackened demand from feed manufacturers. Recently price at Chicago was $7.50 to $7.75 in bags, unground, and at New York around $7.30 to $7.75.

POTASH: Domestic producers are stepping up shipments as demand expands from contract customers. Very little imported material is on the market.

PHOSPHATE ROCK: Prices continue firm and the market steady.

SUPERPHOSPHATE: Shipments are in seasonal dimensions and prices steady.

AMMONIUM NITRATE: Prices remain steady and demand expanding with supplies apparently adequate.

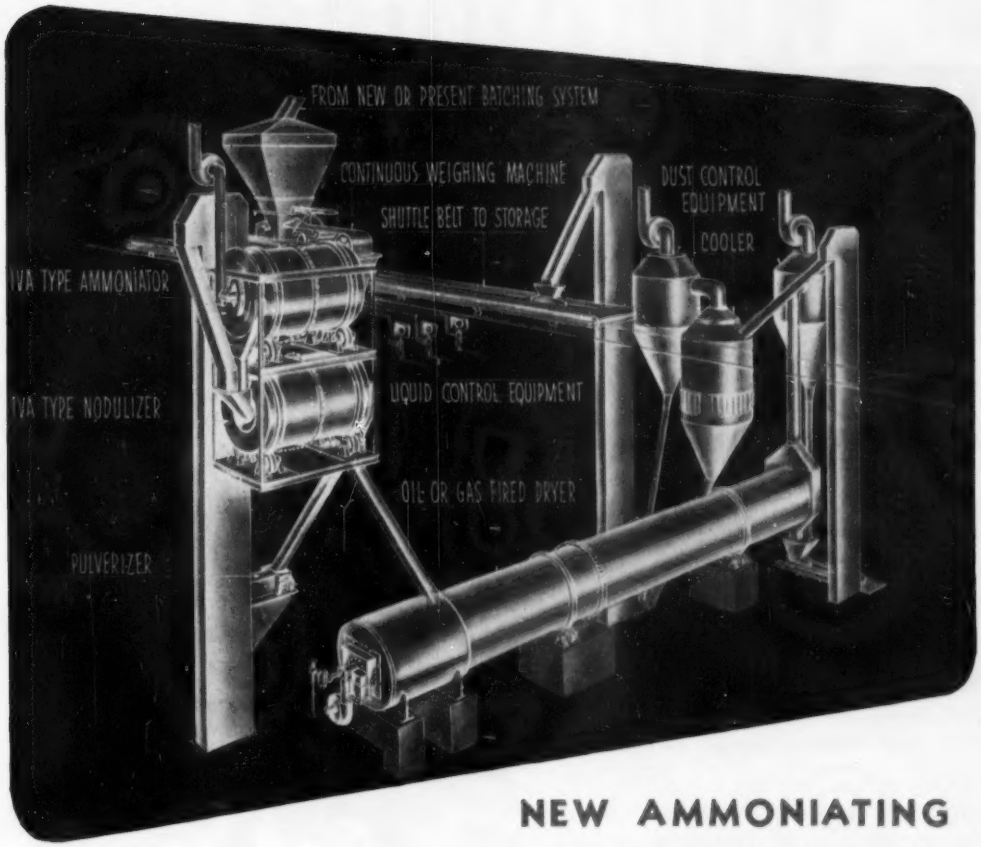
NITRATE OF SODA: Stocks at the ports are building up in anticipation of later heavy demand. Prices are steady on both domestic and imported material.

GROUND COTTON BUR ASH: The major producer of this source of Potash primarily in the form of Carbonate of Potash is sold up through December, but expects to have adequate supplies January forward.

GENERAL: Most fertilizer materials appear to be in adequate supply with the exception of Organic Ammoniates, which are in very tight supply, with prices firm and rising.

Renneburg Offers 20 Page Catalog

A catalog which reviews the entire line of chemical processing, food processing, fertilizer and fish reduction equipment, and which introduces and features DehydroO-Mat, has been issued by Edw. Renneburg & Sons Co., Dept. CF, 2639 Boston Street, Baltimore 24, Maryland. Write for bulletin 854.



NEW AMMONIATING AND GRANULATING PROCESS

This new TVA Sackett-Built continuous process produces high-analysis granular mixed fertilizers from lower cost raw materials. The finished product need be stored only 48 hours before packaging. Eliminates "caking" in the bag. This process is presently being offered in 10, 15 and 20 tons per hour capacities. Can be incorporated into new or existing buildings. We also do the required engineering, installation and supervision of initial production if owner desires.

Superphosphate and mixed goods producers are invited to get our seasoned counsel on their expansion and modernization programs. It is available at no cost.

SACKETT BALTIMORE

America's Foremost Designers and Builders..

SUPERPHOSPHATE PLANTS · FERTILIZER MIXING PLANTS

RELATED PRODUCTION EQUIPMENT

THE A. J. SACKETT & SONS CO.,
1727 S. HIGHLAND AVENUE, BALTIMORE 24, MD.

Architects and Manufacturing Engineers to the Fertilizer Industry since 1897

EXACT WEIGHT Sacking Scales Save Time, Product, Profit!

. . . choice of FIVE MODELS assures correct type for YOUR requirements

Sack, weigh, and visibly checkweigh in ONE operation—with an EXACT WEIGHT Sacking Scale. One simple operation does the work of three. One man can bag, weigh, and check as much as 100 tons of free-flowing materials per day from overhead hopper to foot-level conveyor. The saving in labor costs, together with the saving from elimination of overweights, can pay for the installation. Simple to operate—has just two controls. It takes just four easy motions to attach a bag, fill it, weigh it, and release to conveyor. Scale will handle multi-wall paper, paper-lined cotton, or burlap bags. Built for hard service. Write for complete details.

Sales and Service from Coast to Coast

Model 2229 for overhead suspension. Four other models offer a variety of mountings.

Model 2227 mounted on rollers for easy operation under two or more hoppers.

Exact Weight Scales

Better quality control

Better cost control

THE EXACT WEIGHT SCALE COMPANY

906 W. Fifth Avenue, Columbus 8, Ohio

In Canada: P. O. Box 179, Station S, Toronto 18, Ont.

the New BAUGHMAN fertilizer spreader

gives you...

- "METERED" SPREAD at any speed or gear.
- FULL HYDRAULIC OPERATION

MODEL K4B—Priced at $1565.00, including Spreader Hood. FOB Jerseyville, Ill. Other models as low as $985.00 for 10' body.

"METERED" SPREAD: Makes every pound of fertilizer count! Just check the Chart (see Figure 1 in photo above) for desired amount of fertilizer to be spread per acre; set the Gate (Figure 2); apply the volume you want. It's as simple as that! No waste . . . every field is accurately and scientifically spread.

HYDRAULIC DISTRIBUTION: As trouble-free as a spreader can be. No dust can get into sealed hydraulic system . . . eliminates gas engine, transmissions, gear reduction cases, or bearings. Governed Hydraulic Distributor (Figure 3) assures uniform width of spread, regardless of engine speed. The hydraulically-applied Ground Drive provides uniform flow of fertilizer to distributor, regardless of engine speed or gear.

SALES and SERVICE from COAST to COAST

ALABAMA
Birmingham, Leary & Owens Machinery Co., Inc.
ARIZONA
Marana, Marana Equip. Inc.
Phoenix, Guerin Implement Co.
Yuma, Beeler Thomas Implement Co.
CALIFORNIA
Hanford, Walt Vigario
La Habra, I. J. Cool Company
Oakland, Mill Engineering & Mach. Co.
Oakland, Monarch Truck Equip. Co.
Tulare, Jim Ingle Co.
COLORADO
Denver, Timpte, Bros., Inc.
CONNECTICUT
Hartford, Holmes-Talcott Co.
DELAWARE
Milford, B. V. Wharton
GEORGIA
Atlanta, Brooker Truck Equip. Co.
ILLINOIS
East St. Louis, Transportation Equip. Co.
Hoopeston, Cox Brothers
Jerseyville, Baughman Serv. & Equip. Co.
Mason City, Baughman Serv. Co.
Moline, Moline Body Co.
INDIANA
Evansville, Hallenberger, Inc.
Indianapolis, Allied Truck Equip. Corp.
IOWA
Boone, Baughman Mfg. Co., Iowa Sales Div.
Des Moines, Hawkeye Truck Equip. Co.
Mason City, Heimbuch Implement Co.
Quimby, Simonsen Mfg. Co.
Washington, Loveless Implement Co.
KANSAS
Columbus, Paul Coons
KENTUCKY
Lexington, Wilson Mach. & Supply Co.
Owensboro, Wilson Mach. & Supply Co.
LOUISIANA
New Orleans, Truck Equip. Co.
MASSACHUSETTS
Cambridge, Sandberg Equip. Co.
MICHIGAN
Lansing, Truck & Trailer Equip. Sales Co.
Rockford, Burch Body Works
Saginaw, Scientific Brake & Equip. Co.
St. Joseph, Terminal Materials Corp.
MINNESOTA
Duluth, Road Mach. & Supplies
Minneapolis, Ruffridge-Johnson Equip. Co.
MISSISSIPPI
Jackson, Cook and Co.
MISSOURI
Chillicothe, Cooke Sales & Serv., Inc.
Columbia, Columbia Machine Shop
Hannibal, Riegel Tire & Implement Co.
St. Louis, Sleeper Equip. Corp.
Sedalia, M. J. Ressel & Sons
MONTANA
Billings, Industrial Equip. Co.
Great Falls, Normont Equip. Co.
Kalispell, Treasure State Equip. Co.
NEBRASKA
Lincoln, Highway Equip. & Supply Co.
NEW JERSEY
Newark, Tyler-Preusser Mach. Corp.
NEW MEXICO
Anthony, Southwest Fertilizer & Chem. Co.
NEW YORK
Buffalo, T. E. Potts Equip. Co.
Groton, Highway Materials Co., Inc.
Pelham Manor, Tyler-Preusser, Inc.
Rensselaer, Van's Equip. Sales, Inc.
NORTH CAROLINA
Charlotte, Twin-States Equip. Co.
Raleigh, Twin-States Equip. Co.
OHIO
Canfield, Myers Equip. Corp.
Cleveland, Ohio Truck Equip. Co.
Columbus, Harry J. Reynolds and Associates
Toledo, Riedy-Manner Truck Equip. Corp.
OKLAHOMA
Tulsa, Tulsa Machinery Co.
OREGON
Amity, Burlingham-Meeler Lime Co.
PENNSYLVANIA
Camp Hill, L. B. Smith
Erie, Farm Equip. Co.
Marion Center, Beatty Brothers
SOUTH DAKOTA
Sioux Falls, Roy F. Drake Body & Equip. Co.
TENNESSEE
Knoxville, Brooks Equip. & Mfg. Co.
Memphis, Scruggs Equip. Co.
Nashville, Industrial Tractor & Equip. Co.
TEXAS
El Paso, Equipment Supply Co., Inc.
El Paso, Hobbs Trailer Sales Co., Inc.
Fort Worth, Hobbs Mfg. Co.
Houston, Mathieson Chem. Co.
Houston, South Texas Truck Equip. Co.
Sulphur Springs, Longhorn Brokerage Co.
UTAH
Salt Lake City, Lund Machinery Co.
VIRGINIA
Richmond, Smith-Moore Body Co.
Roanoke, Growers & Producers Exchange, Inc.
Winchester, Shade Equip. Co.
WISCONSIN
Eau Claire, Olsen Equip. Co.
Green Bay, Olson Trailer & Body Builder Co.
Madison, Johnson Welding Co.
Stoughton, Rein & Dahl
CANADA
Toronto, Ontario, Conmac Equip. Co., Ltd.
Winnipeg, Manitoba, Mumford, Meland, Ltd.

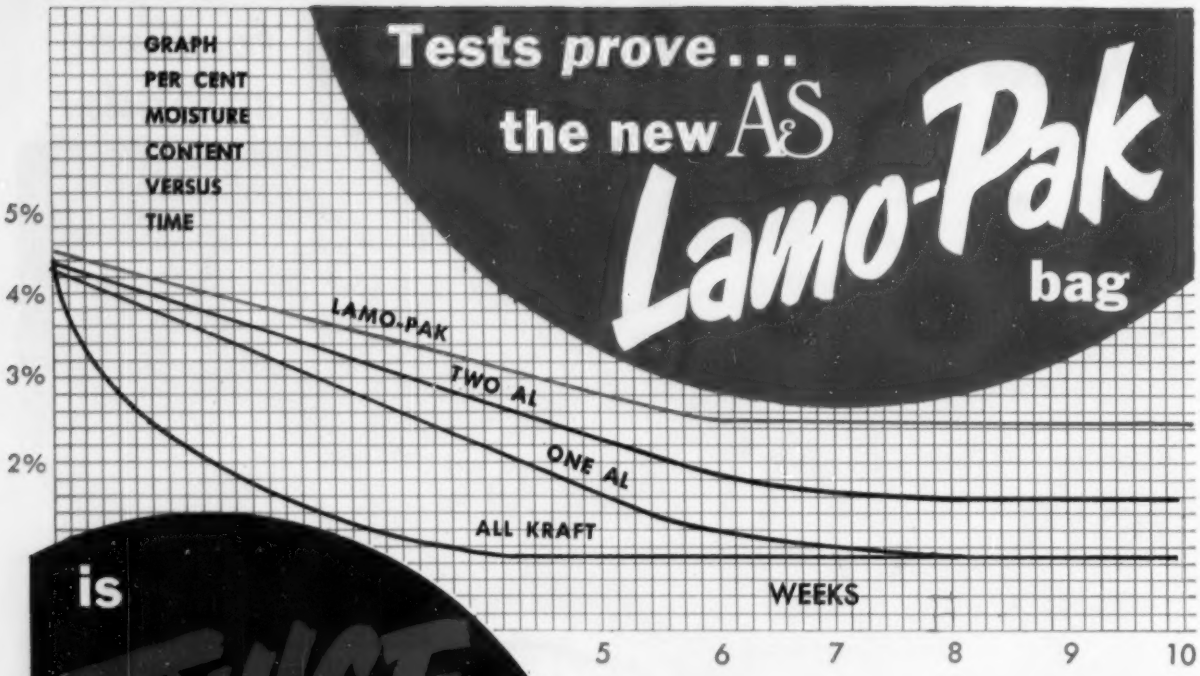
BAUGHMAN
HI-SPEED SPREADING AND CONVEYING EQUIPMENT

"Oldest and By Far the Largest Manufacturer of Automatic Spreading Equipment"

BAUGHMAN MANUFACTURING CO., Inc.

SHIPMAN ROAD • JERSEYVILLE, ILLINOIS

Tests prove... the new A&S Lamo-Pak bag



is TWICE as effective a moisture barrier!

Photograph shows how product packaged with LAMO-PAK retains original moisture content and does not cake up. Note how caking of product due to excessive moisture-loss results from packaging with double-asphalt-laminated kraft.

and LAMO-PAK costs 10% less than double-asphalt-laminated kraft!

■ Impressive tests recently run by independent laboratory show that the new Arkell and Smiths LAMO-PAK moisture barrier sheet is up to 50% more effective in retaining moisture content—and equally effective with hygroscopic products in keeping moisture out!

LAMO-PAK has plus values over both a single ply and two plies of asphalt laminated paper!

LAMO-PAK — a newly developed laminate sandwiched between two sheets of lightweight kraft — will protect products negatively affected by moisture changes. LAMO-PAK has these *plus* advantages over asphalt laminated kraft:

- ★ economical!
- ★ less paper stiffness!
- ★ up to 50% greater moisture protection!
- ★ easier closure operation!

A & S — backed by close to a century of manufacturing "know-how" — inspires confidence as it spearheads the search for valuable new packaging materials. ARKELL & SMITHS means top-flight designing, quality printing, laboratory-controlled production . . . guaranteed every time!

ARKELL and SMITHS

For additional information on A & S Lamo-Pak, write to Arkell and Smiths, Packaging Division, Canajoharie,

PLAIN or PRINTED | BAGS ENVELOPES WRAPS ROLLS

SALES OFFICES IN ALL PRINCIPAL CITIES

NOW YOU CAN GET . . .

Republic top-quality Ammonium Sulphate
BULK OR BAGGED—IN CARLOAD LOTS

Republic's free-flowing Ammonium Sulphate is now available in bulk form or bagged. It is ready to be shipped to you in carload lots promptly and at regular intervals.

For more information on Republic's top-analysis Ammonium Sulphate, contact or write to:

REPUBLIC STEEL CORPORATION
REPUBLIC BUILDING • CLEVELAND 1, OHIO
Export Department: Chrysler Building, New York 17, New York

REPUBLIC AMMONIUM SULPHATE

Increase Your Bulk Fertilizer Tonnage with "NEW LEADER" The equipment that gets it there and puts it to work

Progressive fertilizer suppliers from coast to coast are finding that the famous NEW LEADER self-unloading bulk transport gives them maximum payloads, prompt and efficient service to their points of distribution and top performance.

Providing commercial fertilizer in bulk to dealers is one sure way to increase your tonnage and to prolong your peak season. In addition to mixed goods — you can also haul raw materials (super phosphates, etc.).

"New Leader" motor-driven, twin disc spreader with metering attachment in the hands of your custom spreading operators assures the farmer that your material is properly applied for the best possible results. He'll use more, too, because you've saved him work — saved him time.

Write today for complete information, specifications and prices.

HIGHWAY EQUIPMENT CO. Inc.

635 D Ave., N.W., Cedar Rapids, Iowa

Manufacturers of the World's Most Complete Line of Spreaders and Bulk Material Delivery Equipment

BULK FEED and GRAIN BODIES

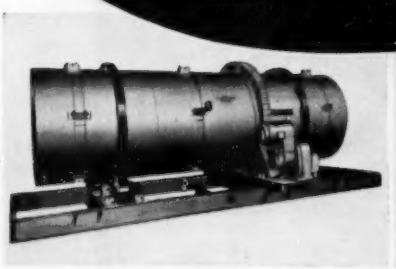
LIME and FERTILIZER SPREADER

SELF UNLOADING TRANSPORT

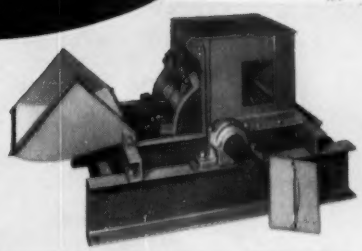
MATERIAL SPREADERS TRACTION-TAILGATE-TRUCK MOUNTED

STURTEVANT FERTILIZER EQUIPMENT

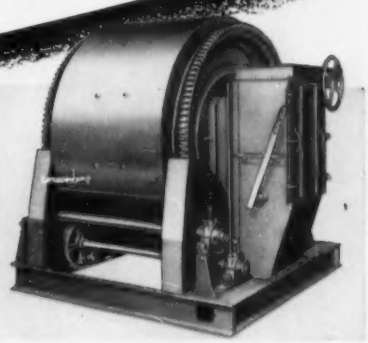
CUTS Cost of Fertilizer Manufacture



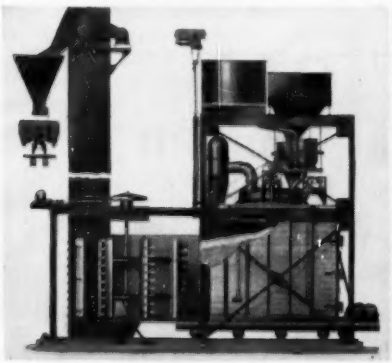
STURTEVANT FERTILIZER GRANULATING UNITS provide you with a complete process for manufacturing granular fertilizer. These efficient units can be supplied for various hourly tonnages and certain granule sizes depending on your particular requirements.



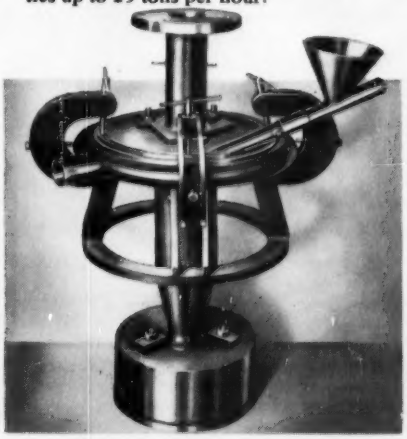
TAILINGS ROTARY PULVERIZER — increases output of fertilizer tailings . . . will not clog . . . leaves no daily accumulation of unground pellets. Capacities up to 25 tons per hour.



DRY BATCH MIXERS — 4-way mixing action mixes two or more ingredients into an inseparable, homogeneous blend. Open door accessibility makes cleaning easy. Capacities ¼ ton to 2 tons.



DEN AND EXCAVATOR—speeds processing of superphosphates. Easily operated by two men . . . produces 16 to 40 tons per batch and up to 480 tons per day of superior fertilizer free from lumps.



MICRONIZER® GRINDING MACHINE — A fluid jet grinding machine, the Sturtevant Micronizer speeds reduction of materials to low micron sizes. These jet mills are especially applicable in fields where a particle size in microns is desired.

MOTO-VIBRO SCREENS — screen everything screenable. Open and closed models with or without feeders. Many types and sizes . . . screens from ½" to 60 mesh.

For over 72 years, the Sturtevant Mill Company has been a leader in the design of plants and manufacture of fertilizer equipment. Equipment that has cut costs, increased tonnage throughout the industry.

Whether you plan to build a new plant, modernize or buy new equipment, it will pay you to consult Sturtevant Mill. Our engineers, specialists in fertilizer manufacture, are available for consultation. Ask for their services, today. You will keep ahead with Sturtevant.

STURTEVANT MILL COMPANY

111 CLAYTON STREET
BOSTON 22, MASSACHUSETTS

Designers and Manufacturers of:

CRUSHERS • GRINDERS
SEPARATORS • CONVEYORS
MECHANICAL DENS and EXCAVATORS
ELEVATORS • MIXERS

No. 1 of a series

How Bemis makes GOOD multiwall bags for you

A.R. Ewing, director of the Bemis Paper Control Laboratory, has twenty-nine years' experience in this field. He is shown operating the laboratory's electro-hydraulic tensile tester, one of the many precision devices that make the Bemis laboratory probably the most complete in the country devoted to bag papers.

Use good paper... test it... prove it!

Bemis sets high standards for the various papers used in making Bemis Multiwall Bags. And we are able to maintain these standards because we buy our paper from a variety of top sources. These multiple sources are the key—if one should fall below par, the others are there to supply our needs. We don't have to take less than the best.

Bemis

General Offices—St. Louis 2, Missouri
Sales Offices in Principal Cities

NFA VOTES FOR NEW INSTITUTE AT FLORIDA FALL MEETING

Highlight of the fall NFA meeting at Hollywood, Fla. was an overwhelming vote in favor of the proposed National Plant Food Institute, merging the National Fertilizer Association with the American Plant Food Council. The proposal, recommended by the directors of both organizations at October board meetings, was favored by 191 of the 192 NFA members who cast ballots. The one dissenting vote was subsequently withdrawn by the firm which had cast it, in order to make the decision unanimous, but since the official tabulation had already been entered the record will carry the vote as originally counted.

E. A. Geoghegan, NFA board chairman who presided at the opening session of the November 10-12 convention, had outlined to the Association's membership the events taking place since last spring in the current effort to unite the two trade groups. He described how differences that seemed insurmountable at first had resolved themselves into negligible details when small committees from each organization met informally in Washington on October 4. The consolidation proposal resulting from this meeting was approved by both groups of directors later that month, and each made plans to submit it to their membership for ratification. Since NFA already had its fall meeting plans in a near-complete state, it was decided to present the plan to its delegates at that meeting, Mr. Geoghegan explained, while APFC arranged a special called meeting of its members in Washington on December 1 to make a final decision on the arrangement.

Aside from the merger consideration, the business schedule at the convention was light, to allow full

1. L. G. Black, Ark-Mo Plant Food Co., Corning, Ark.; S. R. McCoy of Chicago and J. L. Baskin of Orlando, both with International Minerals & Chemical Corp. **2.** E. A. Geoghegan, Southern Cotton Oil Co., New Orleans; John W. Ground, III, Davison Chemical Co., Joplin, Mo.; and George N. Burns, Chase Bag Co., New Orleans, as the three debark from the helicopter that brought them to Miami airport for the long leg of their journey home. **3.** O. H. Sale, Fertilizer Equipment Sales Co., Atlanta, and NFA President Russell Coleman, Washington. **4.** A. D. Kincaid, Columbia, S. C., and E. A. Geoghegan, New Orleans, both of Southern Cotton Oil Company. **5.** John B. Pitner, Clemson Agricultural College, Clemson, S. C., and Oris V. Wells, USDA, Washington. (Richard E. Bennett, Farm Fertilizers, Omaha, and K. D. Jacob, USDA, Beltsville, in the background.) **6.** Walton Dennis of Raleigh and Gaines Boynton of Atlanta, both with International Minerals & Chemical Corp. **7.** John Perryman, R. D. Cole Mfg. Co., Newnan, Ga., and M. E. Hunter, Nitrogen Division, New York.

STAFF PIX FROM NFA MEET

KEY TO PICTURES

1. The first wave of delegates descends on the desk to vote on the NFA-APFC merger issue; the vote was 192 for, 1 against. **2.** Mrs. M. G. Field, Hattiesburg, Miss.; R. A. Heuerman, International Minerals & Chemical Corp., New York; A. A. Schultz, Reading Bone Fertilizer Co., Reading. **3.** Bruce D. Cloaninger, Association of American Fertilizer Control Officials, Clemson, S. C.; Mr. & Mrs. James J. Devlin, Southwest Potash Corp., New York; Fred J. Purcell, Combustion Engineering, Atlanta. **4.** Thomas W. Davies, Synthetic Nitrogen Products Corp., Columbia, S. C.; Doc. R. Oliver, Pine Level Oil Mill, Pine Level, N. C.; A. D. Kincaid, Southern Cotton Oil Co., Columbia, S. C.; Miguel Tegtmeyer, Synthetic Nitrogen Products Corp., New York; Frank Littlefield, Fulton Bag & Cotton Mills, New Orleans; Ray Gurkin, Fulton Bag & Cotton Mills, Raleigh. **5.** John M. Perryman, R. D. Cole Mfg. Co., Newnan, Ga.; James L. Baskin, International Minerals & Chemical Co., Orlando; Mr. & Mrs. Milton S. Malone, International Minerals & Chemical Co., Atlanta; Mrs. John M. Perryman; Mrs. James L. Baskin; Mrs. Bernard Macher, Montgomery. **6.** S. E. Ruark, and J. H. Dively of Baltimore, Jack Larigan of Birmingham, and James J. Weldon of Baltimore, all with St. Regis Sales Corp. **7.** Hartl W. Lucks and C. E. Veth, Smith Agricultural Chemical Co., Columbus, Ohio; Ed M. Kolb, American Potash & Chemical Corp., New York; Marshall A. Smith, Smith Agricultural Chemical Co., Columbus. **8.** Mr. & Mrs. Miguel Tegtmeyer, Synthetic Nitrogen Products Corp., New York; Frank Littlefield, Fulton Bag & Cotton Mills, New Orleans; Mr. & Mrs. Thomas W. Davies, Synthetic Nitrogen Products Corp., Columbia, S. C. **9.** Charles Martin and William R. Morgan of International Minerals & Chemical Corp., and B. W. Guess of Swift & Co., all from Chicago. **10.** Bob Borg and Bill Dible of International Minerals & Chemical Corp., Chicago. **11.** C. E. Reger, Hector Supply Co., Miami; E. K. Thomason, Atlanta Utility Works, East Point, Ga.; Mrs. C. E. Reger. **12.** Mr. & Mrs. Porter Brinton, Hydrocarbon Products Co., New York. **13.** Mr. & Mrs. S. B. McCoy, International Minerals & Chemical Corp., Chicago. **14.** H. H. McIver and Alex M. McIver, Alex M. McIver & Son, Charleston, S. C. **15.** Baird Green and Mr. & Mrs. Albert Green, Jackson Fertilizer Co., Jackson, Miss. **16.** NFA Board Chairman E. A. Geoghegan of Southern Cotton Oil Co., New Orleans, alongside the helicopter which carried him to the Miami airport to make a close schedule back home.

1. Kirk Sanders, Atlanta, with C. J. Byrd and H. C. Ihde of Kansas City, all Spencer Chemical Co. 2. C. R. Martin, Miami Fertilizer Co., Dayton, and Clement S. Schmelzer, Smith Agricultural Chemical Co., Columbus. 3. Mr. & Mrs. L. Graham Campbell, Chamberlin & Barclay, Cranbury, N. J. 4. Mr. & Mrs. M. J. Clement, Jr., and Mr. & Mrs. M. J. Clement, all of Merchants Fertilizer & Phosphate Co., Pensacola; Mr. & Mrs. M. G. Field, Meridian Fertilizer Co., Meridian. 5. Mr. & Mrs. Milton S. Malone, International Minerals & Chemical Corp., Atlanta. 6. Mr. & Mrs. John W. Hall, Potash Co. of America, Washington. 7. R. H. Linderman, International Minerals and Chemical Corp., Atlanta; James F. Naftel, Pacific Coast Borax Co., Auburn; L. D. Hand, Pelham Phosphate Co., Pelham, Ga.; F. J. Woods, Gulf Fertilizer Co., Tampa. 8. Mr. & Mrs. Victor Erikson and Mr. & Mrs. Walter E. Meeken, all of Consolidated Rendering Co., Boston. 9. Canadian delegation at NFA's fall meeting included (seated) Austin A. Scales, Island Fertilizer Co., Prince Edward Island; Mrs. H. E. Lefevre; T. S. L. Pope, International Fertilizer Co., Quebec; (standing) V. B. Lillie, Canadian Industries, Montreal; Delbert Dupre, Canada Packers, Montreal; Alex Mooney, Canada Packers, Toronto; H. E. Lefevre, French Potash & Import Co. 10. Walton Dennis, International Minerals & Chemical Corp., Raleigh; Mrs. J. L. Baskin, Orlando; Gaines Boynton, International Minerals & Chemical Corp., Atlanta; Mrs. M. S. Malone, Atlanta; Mrs. S. B. McCoy, Chicago; Mrs. John Perryman, Newnan, Ga.

V-C® Inspections Mean Better Bags for You

Inspection of newly tubed bags just before bottoming operation. Careful inspections mean better bags for you.

Inspection of finished pasted bags. Because these pasted closures must stand great weight and shock, special care is taken to see that all surfaces are absolutely bonded.

Final inspection of sewn-valve bags. Specially-trained inspectors examine every bag before it moves to the baling machine.

EVERY STEP in the manufacture of V-C Multiwall Bags is controlled by a system of rigid inspections. Operators are specially trained to watch for the slightest imperfections. It will pay you to put V-C's bag-making experience and skill to work on your packaging problems. Write for full information about better-built V-C Multiwall Bags, or discuss your bag requirements with a V-C representative.

V-C® BAGS

Virginia-Carolina Chemical Corporation

BAG DIVISION: 9th and Perry Streets, Richmond 5, Virginia

DISTRICT SALES OFFICES: Atlanta, Ga. • Wilmington, N. C. • New York, N. Y. • E. St. Louis, Ill. • Cincinnati, Ohio

1. H. H. Tucker, Worthington, Ohio, and K. D. Jacob, USDA, Beltsville. 2. Mr. & Mrs. H. C. Lawless and Charles Mittleman, all of Kraft Bag Corp., New York. 3. Mr. & Mrs. Elbert N. Carvel, Valliant Fertilizer Co., Laurel, Del., and Ken Morrison, Universal Detergents, Long Beach. 4. Dr. & Mrs. Richard Bradfield, Cornell University, Ithaca, N. Y. 5. W. L. Gray and C. D. Smith, both of Swift & Co., Shreveport. 6. Edwin Valliant, Jr., Valliant Fertilizer Co., Laurel, Del.; Robert A. Heuerman, International Minerals & Chemical Corp., New York; L. Graham Campbell, Chamberlin & Barclay, Inc., Cranbury, N. J. 7. Allen G. Clarke and Ross R. Worthington of Bagpak Division, International Paper Co., New York; R. H. Linderman, International Minerals & Chemical Corp., Atlanta. 8. J. W. Rutland, Western Carolina Phosphate Co., Waynesville, N. C., and H. B. Mann, American Potash Institute, Washington. 9. Walter Sackett, A. J. Sackett & Sons Co., and Edwin Valliant, Jr., Valliant Fertilizer Co., Laurel, Del. 10. Ray King, Georgia Fertilizer Co., Valdosta, Ga. and K. D. Jacob, USDA, Beltsville.

opportunity for everyone to enjoy the usually-delightful outdoor climate of Florida in the fall. However, the weather man wasn't as cooperative as he might have been and a rain varying from a drizzle to a cloudburst—borne by gusty winds—persisted through most of the three-day meeting.

Preceding the voting at the Thursday morning session, Dr. Russell Coleman, NFA president, presented a concise but complete report on the Association's activities, and introduced the premiere showings of some new NFA films. One of the new productions, a brief black-and-white movie, is designed for television presentation. Relating to plant food deficiencies, the short TV feature is based on (and designed to promote the sale of) the new book "The Care and Feeding of Garden Plants," written by 16 of the nation's leading authorities and published by NFA in cooperation with the American Society for Horticultural Science. The book, just ready to come off the presses, was unveiled to the NFA membership at the convention.

"The Big Test," a movie designed for showings before farmers and commercial growers, interestingly weaves advice and instruction on soil sampling into the tale of a bet on raising a tremendous watermellon. Another film entitled "Weather or Not" was produced in cooperation with the Sprinkler Irrigation Association and carries a moral about irrigation and fertilization in the humid areas of the country. With the current surge of interest in irrigation, NFA seeks to publicize that more plant food must be used if irrigation is to be fully successful. These two movie presentations were actually previews, since the advance copies of the films which were shown are to undergo additional modifications before they are released for public showing.

On the social side of the calendar, a leisurely program of events had been planned to suit the taste of everyone. Wednesday afternoon was devoted to a ladies' buffet and fashion show on the swimming pool

1. This is no optical illusion, it's actually a real live elephant with Harold A. Trammell of Farmers Fertilizer Co., Texarkana, Texas. 2. Checking ballots of the vote on merger with APFC are: W. N. Watmough, Jr., Davison Chemical Co., Baltimore; William S. Ritnour, NFA Staff, Washington; Walter E. Meeken, Consolidated Rendering Co., Boston. 3. Oris V. Wells, administrator of USDA's Agricultural Marketing Service, speaks on "Farm Income in the Years Ahead." 4. NFA Board Chairman E. A. Geoghegan, Southern Cotton Oil Co., New Orleans, reviews background and details of the proposed NFA-APFC merger with the members in attendance at NFA's fall meeting. 5. Fred Bryan, Chilean Nitrate Sales Co., Atlanta, and C. D. Shallenberger, Shreveport Fertilizer Works, Shreveport. 6. Mr. & Mrs. Moultrie J. Clement, Jr., Merchants Fertilizer & Phosphate Co., Pensacola. 7. Mr. & Mrs. S. L. Nevins, Olin Mathieson Chemical Corp., Little Rock. 8. Vincent Sauchelli, Davison Chemical Co., Baltimore; S. K. Bradley, Union Bag & Paper Corp., New York; Joe Stough, Davison Chemical Co., Charleston, S. C. 9. Mr. & Mrs. Henry K. Lange, Lange Brothers, St. Louis, and Mr. and Mrs. W. D. Barton, Tennessee Corp., East Point, Ga. 10. Eugene German, Robert Ashcraft, Mrs. Eugene German, Warren Huff, Mrs. John Foy, H. C. Colvin, and John Foy, all with Ashcraft-Wilkinson Co., Atlanta. 11. Warren E. Johnson, U. S. Industrial Chemicals Co., New York; William T. Dible, International Minerals & Chemical Corp., Chicago; R. A. Heuerman, International Minerals & Chemical Corp., New York; (center) J. E. Totman, Summers Fertilizer Co., Baltimore; Henry K Lange, Lange Bros., St. Louis; Elbert N. Carvel, Valliant Fertilizer Co., Laurel, Del.; Bruce D. Cloaninger, secretary--treasurer of the Association of American Fertilizer Control Officials, Clemson, S. C.; J. Morse Smith, H. J. Baker & Bro., New York. 12. Mr. & Mrs. William T. Doyle, Sturtevant Mill Co., Boston, and Albert Green, Jackson Fertilizer Co., Jackson, Miss. 13. Mr. & Mrs. Robert H. Engle, NFA, Washington. 14. Cecil Wadleigh, USDA, Beltsville, and Vincent Sauchelli, Davison Chemical Co., Baltimore. 15. Mr. & Mrs. George Wash, Phillips Chemical Co., Bartlesville, Okla. 16. Mr. & Mrs. T. E. Camp, Jr., Southwest Potash Corp., New York. 17. Mr. & Mrs. W. S. Tyler, Red Star Fertilizer Co., Sulphur Springs, Texas.





NFA












Note the compactness of Commercial Solvents Corporation's new 225-ton-per-day Stengel Process Ammonium Nitrate Plant at Sterlington, La.

Crystalline AMMONIUM NITRATE FERTILIZER *in one simple step* THROUGH C & I

Actual Crystal Size

C & I can now license the new CSC Stengel Process to users and furnish complete plants to produce crystalline ammonium nitrate (33.5% N). Due to simplicity of design, capital and operating costs of these plants are substantially less than similar plants using prilling and granulating processes.

FREE FLOWING In this process, ammonium nitrate of any desired particle size can be produced in a single step. Actual spreading tests in the field have proved that this crystalline ammonium nitrate is completely free flowing with a more controllable flow than competitive products.

Solidified ammonium nitrate sheet is broken into small bits by rotating spoke shaft.

NON-CAKING This new exclusive process produces a very low-moisture material permitting satisfactory long term storage. The coating on the particles reduces to an absolute minimum the tendency of ammonium nitrate to absorb moisture.

C & I ammonium nitrate plants using the Stengel Process can also produce limed ammonium nitrate (20.5% N) and ammonium nitrate sulfate (26.5% N). These plants are constructed at a fixed price with production and efficiencies guaranteed.

C & I can also furnish nitric acid and complex fertilizer plants (using PEC process) on this same basis.

Specialists in C&I *Processing Ammonia*

THE CHEMICAL AND INDUSTRIAL CORP.

CINCINNATI 26, OHIO

1. W. S. Ritnour, NFA, Washington, takes a final look at the registration desk as the convention winds up. 2. Mr. & Mrs. Gene Van Deren, Bluegrass Plant Foods, Cynthiana, Ky., and Mr. & Mrs. Jack B. Synder, Snyder Chemical Co., Topeka. 3. William E. Schnaffnit, Stedman Foundry & Machine Co., Philadelphia, and Fred J. Purcell, Combustion Engineering, Atlanta. 4. Maurice Lockwood, Plant Food Div. of International Minerals & Chemical Corp., Chicago, and Richard E. Bennett, Farm Fertilizers, Omaha. 5. T. F. Bridgers, Farmers Cotton Oil Co., Wilson, N. C., and G. Albert Woods, Potash Co. of America, Washington. 6. William Caspari, Jr., and M. G. Geiger, both of Davison Chemical Co., Baltimore. (H. H. Tucker, Worthington, Ohio, in the background.) 7. R. W. Goldtwaite and G. G. Scott, both with Lion Oil Co., El Dorado, Ark. 8. Dr. & Mrs. J. K. Plummer, Tennessee Corp., East Point, Ga. 9. Warren E. Johnson, U. S. Industrial Chemicals Co., New York; Mrs. Douglas Kelly, El Dorado, Ark.; Elbert N. Carvel, Valliant Fertilizer Co., Laurel, Del.; Mr. & Mrs. W. Gedge Gayle, Kelly, Webber & Co., Lake Charles, La. 10. James D. Dawson, Jr., Fidelity Chemical Corp., Houston; G. A. Wakefield, Olin Mathieson Chemical Corp., Little Rock; John D. Zigler, International Minerals & Chemical Corp., Chicago. 11. Mr. & Mrs. J. B. Manassee, Werthan Bag Corp., Nashville; Mr. & Mrs. Milton S. Malone, International Minerals & Chemical Corp., Atlanta; Mr. & Mrs. John Perryman, R. D. Cole Mfg. Co., Newnan, Ga.; Mrs. Nelson C. White, Chicago.

terrace at the hotel. Thursday afternoon the ladies enjoyed a trip to the fashionable Lincoln Road shopping section of Miami Beach, with scheduled transportation arranged by the Association.

Thursday evening began with a cocktail party at which H. J. Baker & Bro. played host. The convention banquet followed, featuring music but no speeches, with the main dining room filled almost to capacity by the nearly-600 guests. Final event of the night was an aquatic show at the swimming pool and cabana terrace, where top-flight divers and swimmers entertained the large group which braved 35 mile wind gusts (fortunately, the rain held off long enough for the show to run its course).

Friday morning's business session heard two prominent men from the world of agriculture speak on subjects vitally affecting the consumption of plant foods. Dr. Richard Bradfield, head of the Department of Agronomy at Cornell University, told of "Organic Farming with Chemical Fertilizers," and Oris V. Wells, administrator of USDA's Agricultural Marketing Service, spoke on "Farm Income in the Years Ahead."

"Farmers over the next several years are probably faced with a level price outlook," Mr. Wells stated.

"I should like to examine what this means to farmers and those industries who serve farmers, such as the fertilizer industry. But I should first call your attention to certain other economic assumptions or indications which need to be kept in mind. These are: (a) that per unit prices or cost rates paid by farmers will tend to also hold fairly close to current levels, with some tendency toward a downdrift, and (b) that productivity and employment in the American economy generally will allow a continuing gradual increase in the average American standard of living.

"With fairly stable farm prices, increases in farm incomes must chiefly come through reductions in unit costs of producing and marketing farm commodities and through an increase in the volume of farm products produced and sold. Actual incomes per farm worker or farm family from farming operations will of course also depend on the trend in farm population, which has generally tended to decline under conditions of full employment.

"All of you know the contribution that fertilizer has made to increased farm efficiency, and I would also expect you to agree with the statements in the most recent issue of "The Farm Cost Situation" to the effect that the farm price-fertilizer 'relationship is still more favorable than before World War II. Many farms have not yet fully adjusted to the new price relationships and developments in the use of fertilizer.'

"Despite the fact that farmers will economize on production expenses for 1955 crops, we still expect a further increase in the use of commercial fertilizer, with supplies of phosphates for the coming season estimated at about the same and of nitrogen and potash some 7 or 8 percent greater for the coming season than were available in 1953-54.

"However, there are two facts which are of interest in considering the possible future increase in use of fertilizer. First, many of the practices which make for increased efficiency or lower farm costs, es-

1. Vincent Sauchelli, Davison Chemical Co., Baltimore, and James L. Schell, Kingsbury & Co., Indianapolis. 2. Mr. & Mrs. W. Gedge Gayle, Kelly, Weber & Co., Lake Charles, La. 3. Mr. & Mrs. J. H. Epting, Epting Distributing Co., Leesville, S. C. 4. Mrs. L. G. Black, Corning, Ark., and J. H. Drewry, International Minerals & Chemical Corp., Shreveport. 5. Paul Soule, Deere & Co., Tulsa, and Mr. & Mrs. Harold Krueger, Synder Chemical Co., Topeka. 6. Francis M. Jornlin and R. E. Burke, Wilmington, Del., M. F. Gribbins, Chicago, and John Spicer, Goldsboro, N. C.; all with DuPont Co. 7. R. H. Linderman, International Minerals & Chemical Corp., Atlanta; E. K. Ludington, Jr., Chase Bag Co., New York; S. T. Keel, International Minerals & Chemical Corp., Chicago.

pecially per unit of product, are practices which operate best in terms of increasing yields per acre or aggregate output for the farm as a whole; and, second, farm expenditures for fertilizer do tend to vary directly with farmers' cash receipts from year to year, even though there is a long-run trend toward increasing use of fertilizer. These facts underline the common interest of farmers and farm suppliers in finding ways and means of increasing the farm market.

"An increase in the volume produced and sold may of course come about in several ways. With a rising population in the United States, the simple maintenance of average per capita consumption rates has meant for several years past and will mean for some years ahead a gradual increase in volume of food and fiber products domestically used. But in addition to this normal increase which might be associated with an increase in population, farmers and those handling farm products are of course interested in the possibility of increasing per capita consumption rates here at home as well as moving increased quantities of farm commodities into the export market.

"Perhaps I am biased as Administrator of the Agricultural Marketing Service. But it nevertheless does seem to me that we are beginning to make some real progress in the marketing field.

"The last session of Congress did provide for shifting the agricultural attaches back into the USDA's Foreign Agricultural Service, as a means of bringing them closer to the marketing problems of American farmers and exporters of American farm products, and also passed the Agricultural Trade Development and Assistance Act.

"Meanwhile, the USDA has concentrated activities relating to marketing within the United States itself in the Agricultural Marketing Service and the Congress has provided a substantial increase in funds available for agricultural research, including marketing research.

"But most encouraging of all is the fact that farmers and their own organizations are taking a new and more intensive look at the marketing job."

An increasing diet level, Mr. Wells continued, has made obesity a significant health problem, and this is boosting the demand for foods of high protein, vitamin and mineral content. These harder-to-produce and more expensive foods will alter the agricultural picture to some extent. Also, there has been no significant change in the past 30 years (and won't likely be in the future) in our total acreage of cultivated cropland . . . yet a growing population with an increasing diet level makes more and more demands on agriculture. This, he concluded, is why the fertilizer industry cannot help continuing as a long-term "growth industry."

Dr. Bradfield, one of the nation's outstanding soil scientists, based his remarks on the theme that "it is not a question of organic or chemical fertilizers—both are essential and as inseparable as Siamese twins" for the highest type of agriculture.

The high regard which farmers

1. Mr. & Mrs. J. E. Totman, Summers Fertilizer Co., Baltimore. 2. Mr. & Mrs. A. A. Schultz, Reading Bone Fertilizer Co., Reading, Pa. 3. John R. Taylor, Jr., Grand River Chemical Div., and Malcolm H. McVicker, NFA, Washington. 4. Mr. & Mrs. R. E. Bennett and Mr. & Mrs. R. W. Turner, Farm Fertilizers, Omaha. 5. Harvey Melson, Melson Fertilizer Co., Georgetown, Del., and Borden S. Chronister, Nitrogen Div., Hopewell, Va. 6. Malcolm McVickar and Ed Kapusta, both of the NFA staff, Washington. 7. T. C. Rogers and Cliff Camp, both with Nitrogen Div., New York. 8. Mr. & Mrs. C. D. Shallenberger, Shreveport Fertilizer Works, Shreveport. 9. Mr. & Mrs. James L. Dowling Dowling Bag Co., Valdosta, Ga.

National Plant Food Institute Approved, Effective July 1

Consolidation of the American Plant Food Council and the National Fertilizer Association into the National Plant Food Institute, effective July 1, was approved by APFC members December 1.

Favorable vote by the Council's membership constituted final action in bringing together the two national trade associations, since NFA members had approved the merger plan at their fall meeting in Hollywood, Fla. November 11. Approval of the consolidation proposal had previously been recommended by NFA's board of directors on October 19 and APFC's governing body on October 28, following successful collaboration of a joint committee meeting in Washington October 4. The committee of ten men which developed merger details consists of: Ralph B. Douglass, E. A. Geoghegan, J. A. Howell, John A. Miller, Edwin Pate, C. T. Prindeville, Paul J. Prosser, John E. Sanford, J. E. Totman, and Louis Ware. This committee will also formulate the program to be presented the new board of directors on July 1.

The new Institute's first board of directors—for terms expiring in 1956: Richard E. Bennett, Farm Fertilizers, Inc., Omaha, Nebr.; Ralph B. Douglass, Smith-Douglass Co., Inc., Norfolk, Va.; H. C. Fisher, Diamond Fertilizer Co., Sandusky, Ohio; Wallace B. Hicks, Wilson & Toomer Fertilizer Co., Jacksonville, Fla.; J. A. Howell, Virginia-Carolina Chemical Corp., Richmond, Va.; B. H. Jones, Sunland Industries, Inc., Fresno, Calif.; Ray L. King, Georgia Fertilizer Co., Valdosta, Ga.; William J. Murphy, American Potash & Chemical Corp., New York, N. Y.; W. T. Steele, Jr., Cooperative Fertilizer Service, Richmond, Va.; J. E. Totman, Summers Fertilizer Co., Baltimore, Md.; Louis Ware, International Minerals & Chemical Corp., Chicago, Ill.; M. Steele Wright, Texas Farm Products Co.; Nacogdoches, Texas. For terms expiring in 1957: Elbert N. Carvel, Valliant Fertilizer Co., Laurel, Del.; John V. Collis, Federal Chemical Co.; Louisville, Ky.; J. C. Crissey, G.L.F. Soil Building Service, Ithaca, N. Y.; J. H. Epting, Epting Distributing Co., Leesville, S. C.; R. L. Hockley, Olin Mathieson Chemical Corp., Baltimore, Md.; R. D. Martenet, E. Rauh & Sons Fertilizer Co., Indianapolis, Ind.; Edwin Pate, Dixie Guano Co., Laurinburg, N. C.; George E. Petitt, Potash Co. of America, Washington, D. C.; Hugo Riemer, Nitrogen Div., Allied Chemical & Dye Corp., New York, N. Y.; John E. Sanford, Armour Fertilizer Works, Atlanta, Ga.; Jack B. Snyder, Snyder Chemical Co., Topeka, Kans.; W. C. Stark, Atlantic Fertilizer Corp., Riverhead, N. Y. For terms expiring in 1958: James F. Doetsch, Chilean Nitrate Sales Corp., New York, N. Y.; George W. Gage, Anderson Fertilizer Co., Anderson, S. C.; Marlin G. Geiger, Davison Chemical Co. Div., W. R. Grace & Co., Baltimore, Md.; E. A. Geoghegan, Southern Cotton Oil Co., New Orleans, La.; Edward R. Jones, Apothecaries Hall Co., Waterbury, Conn.; John A. Miller, Price Chemical Co., Louisville, Ky.; John E. Powell, Smith Agricultural Chemical Co., Columbus, Ohio; C. T. Prindeville, Swift & Co., Chicago, Ill.; P. J. Prosser, Baugh & Sons Co., Baltimore, Md.; C. B. Robertson, Robertson Chemical Corp., Norfolk, Va.; Mac C. Taylor, Oregon-Washington Fertilizer Co., Seattle, Wash.; F. J. Woods, Gulf Fertilizer Co., Tampa, Fla.

---

place on organic soil maintenance stems from two factors, he explained. One is the multiple effect of organic matter in the soil, and the other is the universal acceptance of these benefits. However, with the new situations we are meeting in farming these days, both farmers and scientists are questioning the necessity of some traditional practices. A specialized farming replaces general farming and mechanical power replaces farm animals, maintenance of organic content in the land becomes more difficult because there is no need for leguminous forage crops on the farm and there is no animal manure.

Explaining how the organic content of soils falls into two general types—the fresher, newer fraction which is in the earth but not yet of the earth, and the older, more stable fraction which has become integrated with the soil as humus—Dr. Bradfield told how the decomposition of the newer 10% fraction acts in much the same manner as a synthetic soil conditioner. While soil organic matter declines at the rate of only one or two percent a year, crop yields can decline at a much faster rate if the soils are poorly managed.

Urging that better advantage be taken of specific crop residues, he said that the effect of residue from the immediately preceding crop is the most important single effect, more important even than the accumulation from years past, since the rate of release from fresh organic matter is about 20 times that from humidified content. Chemical fertilizers, he added, help the rate of release from organic decomposition.

Also, Dr. Bradfield stated, it would be impossible to produce the amount of organic matter demanded by today's agriculture without the boost in production offered by chemical plant foods. Thus he established the essential and inseparable partnership between organic and chemical fertilizers.

"Don't sell organics short," the agronomist concluded, "for chemical fertilizers can't do the job alone. And the best customer for the fertilizer producer is the farmer who derives the greatest profit from his use of fertilizer."

1. Richard E. Bennett, Farm Fertilizers, Omaha; John Sanders, Mississippi River Chemical Co., St. Louis; Gordon Cunningham, Tennessee Corp., Atlanta. 2. George E. Petitt, Potash Co. of America, Washington, and K. D. Jacob, USDA, Beltsville. 3. C. L. Webb, Raymond Bag Co., Middletown, Ohio, and John A. Miller, Price Chemical Co., Louisville. 4. Roy Gurkin, Jack Ryan and Frank Littlefield, all of Fulton Bag & Cotton Mills, New Orleans. 5. B. H. Jones, Sunland Industries, Inc., Fresno; S. B. Tatem, Swift & Co., Houston; R. S. Rydell, Coronet Phosphate Co., Norfolk. 6. T. S. L. Pope, International Fertilizer Co., Quebec, Canada; W. L. Gay, Berkshire Chemicals, New York; Frank McQuade, Olin Mathieson Chemical Corp., Baltimore.

in the bag

the essential plant nutrient to make a better balanced, complete fertilizer

on the bag

a little sign that adds a lot of sales appeal to a quality fertilizer

added sales

with Sul·Po·Mag

dealers will sell with pride and profit . . . farmers will buy with confidence

Sul·Po·Mag®

Water-Soluble Double Sulfate of Potash-Magnesia
($K_2SO_4 \cdot 2MgSO_4$) · 22% K_2O—18% MgO

Sul-Po-Mag is produced exclusively by the *Potash Division* for use in quality mixed fertilizers and bagged for direct application to the soil. It supplies a properly balanced combination of *sulfate of potash* and *sulfate of magnesium*. Soluble magnesium is so extensively used in magnesium-deficient crop-growing areas, it is often called *the fourth element* in the fertilizer bag. The Potash Division mines and refines at Carlsbad for fertilizer manufacturers: *Muriate of Potash, Sulfate of Potash* and *Sul-Po-Mag*.

potash division · INTERNATIONAL MINERALS & CHEMICAL CORPORATION · GENERAL OFFICES: 20 NORTH WACKER DRIVE, CHICAGO 6

Briefs from joint meeting

OF AMERICAN SOCIETY OF AGRONOMY AND SOIL SCIENCE SOCIETY OF AMERICA

The meetings of the American Society of Agronomy and the Soil Science Society are, of course, packed with papers of wide interest to agronomists—and thus eventually to our own industry. But there are also papers which directly and immediately affect the practices of the fertilizer manufacturer. In what follows we have tried to give you some of the highlights, only, of this meeting—which was held at St. Paul, Minnesota and which ran from November 8 to November 12, with all-day programs every day of the convention.

Because it is in many ways the keynote to the whole occasion, from a fertilizer point of view, and because it expresses so well the fine relationship between ourselves and the agronomists, let us lead off with quotes from the talk made November 11 by William F. Price, general sales manager of Swift's plant food division:

Industry, like agriculture, is faced with constant change. For example, consumer buying habits are never static but in a constant state of change. Education, income, advertising and many other forces create buying trends. So—perhaps if we work closely together—I refer to the industry and agronomists—we can hasten the development of a new trend on seasonal application of plant food that will benefit the farmer, the industry, and be of great credit to your experiment stations.

You and I are not strangers. We know each other's problems well. You gentlemen know many of the industry problems almost as intimately as the industry people themselves. You know the normal movement of plant food from the factory is closely related to the planting periods. The consequent result at the manufacturing level is 4 to 7 months of activity and a comparatively long period of inactivity, particularly where winter grains are not grown. True, the return to the farmer's "normal" fertilizer purchasing habits is of recent vintage—within the past three years if you care to pin point it—but the outlook because of expanded raw material production indicates a period of "plant food aplenty" for many years to come.

A rule of thumb measurement for this "normal" plant food movement is 70% in the first six months of the calendar year and 30% in the last six months. Leveling of any kind—for example, a 60/40 proportion, could have but a beneficial effect. The reasons are obvious because when production is spread on a more even basis, plant capacities are more economically used, sales expenses are reduced; in fact, all expense factors are affected. The net benefits would be a reduction in the cost of doing business that would reflect itself in lower product prices to the farmer.

Certainly, what I've just said is a plain statement of why industry has a tremendous interest in any program that will lengthen the farmer's use period. However, since the farmer eventually benefits, this self-interest requires no apologies! His benefits will not be limited only to lower prices; he can also include the advantages of better cured goods, a complete choice of grades, and dependable delivery service. You know that in the usual pell-mell rush of spring business some farmers are disappointed on one or more of these considerations.

The question that concerns us most at the moment is, **how far can we go in fall application for spring planted crops?** Is it still in or is it out of the experimental stage? Is it wasteful or does it make the farmer money? If sound, how fast can it be developed? I think we can agree that the fine work done in many states on the program, including Wisconsin, Minnesota, Iowa, and Missouri indicates vast possibilities ahead. But industry wants to know how far can the program be expanded—is it suitable, for example, for all the area north of the Ohio River and east of the plains states? Also, is it suitable on sandier soils in the Northern tier of states, or is it economical only on heavier soils in any latitude? These are questions that both the farmer and industry need to know so that we can gear our respective production programs accordingly. Now—when you listen to such statements you may wonder if industry has an appreciation of the agronomist's problems. Yes—we do—and industry not only understands but is very sympathetic to your problems.

If I may be pardoned for a reference to the activities of our own company, I would call your attention to the fact that during the past 12 years we have expended something over two and one-quarter million dollars for such basic research in which the principal objective has been public benefit. This expenditure has been in the form of grants-in-aid to public institutions and is in addition to that research conducted in our own organization.

Before getting back to fall applications, I want to call your attention to an important development. Recently, the National Fertilizer Association and the U. S. Department of Agriculture cooperated on research into the heart of the question about fertilizer prices. Do you know what they found? They found that prices of all items the farmers buy have advanced 125% since 1935. Now—that sounds about right, doesn't it, considering the level of today's economy compared with 1935. But—and get this—fertilizer prices, in terms of **plant food** con-

The Agronomy Club of Iowa State College at Ames has been named the best student agronomy organization of its kind in the United States and winner of a trophy and $100 presented by the American Plant Food Council. The club received the National Agronomy Achievement Award for 1954 at the annual meeting of the American Society of Agronomy at St. Paul, Minnesota, in November. Dr. Willard H. Garman, Council Agronomist (left), presents trophy to the Club's President Galen Rozeboom (right) as Dr. W. H. Pierre, Head, Department of Agronomy, Iowa State College, looks on approvingly.

Composed of 75 active undergraduate students in agronomy, the ISC club is one of 39 at leading agricultural colleges of the country. All are members of the student section of the American Society of Agronomy, and meet annually with the parent association. Determination of the best club in the United States is made on the basis of accomplishments in the areas of education, general college activities, fund raising, recreation and others.

Rozeboom, a senior at Iowa State College from Sanborn, is a member of Alpha Zeta, national agricultural honorary fraternity, and has earned practically 100 percent of his way through college. He is a recognized college leader.

Tom Dennery, Rose Hill, is vice-president; Henry Obeng, Accra, West Africa, secretary; and Delmar Burkett, Keosauqua, treasurer. B. J. Firkins and Darrell Metcalfe of the agronomy department staff are faculty advisors.

tent, have advanced only 13% since 1935. Only 13%! Or stated another way, 90% less than the advance in the price of all items the farmer buys. Now—as the copywriters say—that's "proof positive"—of how one industry can meet the buyer's market with constantly improved products. Now—before I brag too much about industry's accomplishment, let me add that the education you people have done has helped to create the volume of business that has made these price benefits to the farmer possible! and, gentlemen, you can help ever so much if you will get that story over to the public.

You see, we are **not** a wealthy industry and by any standard of comparison we operate on low margins and depend on high volume to keep business costs down. Whenever you hear rumors that this industry profits at the farmer's expense, recognize them as rumors because such allegations are without evidence or foundation. Now—no private industry or business can long survive without profits. Profits are necessary to support research, to interest new capital to invest within the industry, to replace wornout equipment, to meet expansion needs, and so on. The same thing is true of co-ops. Dividends on purchases by members are not large, for what is yielded is needed to amortize the capital investment in land, buildings, and machinery.

So—let's return to fall applications. You have already established well, as a research fact, that plant food can be profitably applied in the fall to legumes, pastures and winter grains. Now—if corn can be pre-fertilized in late fall, that is all we have been waiting for.

Let me emphasize again to you—our industry still needs to level off shipping peaks—and a longer season would be a fine answer. What do I mean by shipping peaks and what causes them? Let's start with the farmer to find the answer. Now, farmers are smart. In times of plenty he postpones ordering anything until the day before he is ready to use it! And, let me add, he expects to get it. The final result is inevitable under such a situation—higher costs and therefore higher prices. The farmers call their dealers and the dealers deluge a flood of orders on us—all at once. The result is inevitable—a first-class jam-up with plants working around the clock during the spring months trying desperately to give the service required.

Now, it would be wonderful—absolutely wonderful—if we could level out our heavy spring shipping period by getting a good portion of the plant food stored **in the ground** during the late fall period for spring crops. If this fall program is sound for a large part of the country, you gentlemen can start counting our blessings right now.

What can we, the industry, do to help you promote the fall application program? Individually we can do a lot and let me assure you we will, when we have the facts from you. In those areas where the practice is sound, we can adopt your program—and we will do it wholeheartedly—by sales contact with the farmers, the dealers—by advertising messages—by direct mail letters—and every other means at our command.

Collectively, we can do much more. We have our fine industry associations—The National Fertilizer Association and The American Plant Food Council—associations set up to help you. We have our regional associations, such as the Midwest Soil Improvement Committee, and, incidentally, you Midwestern agronomists know you are already getting their good support on the fall application idea.

As I said before, there are some members of this industry who support your work with fellowships and grants-in-aid, in line with the industry's capacity to invest in outside research.

We can go to the bankers and demonstrate that here is a program that deserves farmer loans. It is a

safe assumption we can count upon their support. The banking profession from Wall Street to Main Street has virtually grabbed the ball! And why not—since plant food protects the dollars they loan.

At this point, I would be remiss if I failed to recognize the influence of the farm press. The press deserves more than a hearty slap on the back for the splendid way they have cooperated with both the agronomists and industry in the promotion of sound fertility programs. The farmer is an avid reader of agricultural journals and not only places reliance but frequently puts into practice what he reads. The press has been of enormous help to the both of us.

Now—regardless of what industry does—regardless of help from the farm press—we still need more help from you. You are the starting point. You plant the seed of new fertility practices and we will supply the plant food to bring the crop into a bountiful harvest.

You and I have traveled many new roads together. We—

—Pioneered the general usage of plant food, we

—stood together on heavier acreage applications, we

—promoted high analyses and currently we are

—working together on pasture fertilzation.

How fast we together progress on this newest venture of seasonal application will depend upon your research and our ability to sell the products of your effort. Frankly, it looks like a "natural" and speaking for the industry I hope it is. Because in the end, while industry benefits, the farmer is the final benefactor since the benefits pass directly to him in the form of better plant food and lower prices.

* * *

Now, let us pick up some quotes from other papers, the first of which nicely bears on what Mr. Price was saying, and was presented at the same session:

Fertilizers can be applied just as well in the fall as in the spring, according to University of Minnesota studies. The yields of corn, oats and hay will be equally good with either system of application.

Studies were conducted by Clifton Halsey and J. M. Mac Gregor, University of Minnesota soil scientists, over a three-year period.

As one step, they broadcast phosphate alone, phosphate-potash and nitrogen-phosphate-potash on plowed land in the fall and planted oats and corn the next spring. To compare effects they made similar treatments of fertilizer the next spring on several other fields of oats and corn.

At the same time they ran similar trials, top-dressing legume and legume-grass hay in August, October and April.

Increases in yields on all crops were about the same no matter when the fertilizer was applied.

* * *

What he called "a point in passing" but which was especially interesting to your editors, was contained in the following extract from a talk on the problems the world faces in its attempt to feed itself, made by Stanley Andres, Executive Director, National Project in Agricultural Communications:

It would seem the great challenge which we as a group here in St. Paul face is how to manage our own American resources in such a way that they will be preserved and strong at the time when we and the world need them most. There is no more important thing that I can see for American agriculture. Surely with the brains and the leadership and the vaunted knowhow which we possess we can for a short period here reduce the resources in manpower, labor, money, machinery, supplies and what have you behind agricultural production in this country and balance up our picture, at the same time plowing back into the soil the resources which will be vitally necessary to meet our own needs as well as our world commitments in the years ahead.

I know of no greater example of sheer and wanton waste of our natual resources than what we are doing now—spending money and effort and mining the soil to produce crops in excess of our national and effective world needs; piling them up in warehouses and dumping them in unwilling markets or letting them deteriorate and go for livestock feed.

There is some opportunity for increasing food consumption in certain lines here in the United States, but a nation which is eating better than any nation on earth can't boost its over-all intake much higher. We eat well now.

There is a tremendous opportunity

OFFICERS

G. G. Pohlman, head of the agronomy and genetics department at West Virginia University, is the new president of the American Society of Agronomy, was formerly vice-president replacing C. J. Willard, Ohio State University, as head of the organization. Newly elected vice president is Iver Johnson of Iowa State College.

M. B. Russell, agronomy department, Illinois University, is incoming president of the Soil Science Society of America. Emil Truog, University of Wisconsin is past president.

G. H. Stringfield, corn specialist, Agricultural Experiment Station, Wooster, Ohio, is the new president of the Crop Science Division of ASA. H. L. Ahlgren formerly headed the group; G. D. Mott of Purdue University is new vice-president.

BUMPER CROP

. . . with a bright future

Few American fathers head for the woods to look for the family Christmas tree any more. Chances are that the father of the family goes to the corner store and picks out a fine, well-formed tree, one out of a huge crop raised on a Christmas tree "farm."

Essential for such a long-growing crop is a fertile soil, enriched by the proper applications of balanced fertilizers. An important part of these fertilizers is high quality potash. For potash is vital for faster, healthier growth in trees as well as in regular seasonal crops.

United States Potash Company high-grade muriate of potash has the highest K_2O content, and is free flowing and non-caking . . . all-important advantages in the efficient production of fertilizers that make today's Christmas trees and food crops the finest ever grown.

SUNSHINE STATE POTASH U.S.A. A PRODUCT OF NEW MEXICO

REG. U. S. PAT. OFF.

HIGRADE MURIATE OF POTASH 62/63% K_2O
GRANULAR MURIATE OF POTASH 60% K_2O MIN.

Southern Sales Office
Rhodes-Haverty Building, Atlanta, Georgia

UNITED STATES POTASH COMPANY INCORPORATED

30 ROCKEFELLER PLAZA
NEW YORK 20, N. Y.

for increasing food consumption in the so-called underdeveloped areas but, except in limited instances or where we give it away, the only hope for better food supply for at least 50 per cent of the world's population is increased food production from their own resources. This is going to be difficult because most of the "good or fair" agricultural lands of the earth are already in cultivation. The problem becomes one of increasing output on the same soil. This can be done by better methods of production or by changes of crops in favor of the higher calorie production, as in the case of cereals versus cattle. As an example of what could be done, some 875 calories of the average American's diet before World War II came from animal products. If the cereals needed to produce those calories had been utilized direct it would have provided the calorie intake of about three additional persons, or about 6,200 calories from cereals.

Areas where most of the hungry people are located and where there is most need for expanded production fall in the tropical areas and very cool climates. Here the so-called podsol and lateric soils dominate. The podsols cover about 9 per cent of the earth's land area and the lateric or red soils about another 20 per cent. The difficulties surrounding the bringing of these soils into a high state of cultivation are enormous. However, people who have studied the question say that at least 300 million acres of the podsols and about a billion acres of the lateric soils can be put into cultivation.

Here is a number one challenge to the soil scientist, the plant breeder, and the agronomist. Find the fertilizer combination which will hold in the soil and produce results; find the cropping pattern which will stand against the rain slashes; find the type of plant which will produce the food and make possible an increasing food production; and find a way to stabilize that thin layer of vegetable matter over the lower strata of soil. If time permitted I could relate some rather fascinating and illuminating experiences which we had in the Technical Assistance Program on testing out ways of increasing production in many of these tropical and some of the arid land areas.

Suffice it to say that with mounting population pressures ways will be found to make better and more productive use of these soils. Putting into production on a conservative basis of these 300 million acres of tropical lands and Northern lands would make possible the doubling of the world population without any general reduction in the diet level of the more fortunate Western land areas.

* * *

It's time to pay more attention to soil that has come off our slopes, according to soil scientists from the University of Wisconsin.

Soils men have done a lot of research on eroded soils, but there are fewer studies of soil that has been carried to the bottoms of slopes. Since more and more of these soil deposits are being farmed, it's important to get more information about them.

L. H. Gile, Jr., said that he studied soils in the drumlin hill areas of Dodge county, Wisconsin, and learned that soil deposited at the bottom of slopes was even lower in plant nutrients than the eroded soil remaining on the slope.

* * *

Soil can become less fertile—even if it has never seen a plow.

Research shows that some of our prairie soils were losing fertility, and needed more lime and fertilizer even before European settlers came. Rain was leaching the plant nutrients from the soil, so the prairie grasses were growing less vigorously, supplying less organic matter.

E. J. Pedersen and F. D. Hole reported on a technical study of two prairie soils in Wisconsin and Illinois. One soil was about 15,000 years old, while the other is estimated at 25,000 years old. They reported details of their study of a small piece of land that was in virgin prairie bluegrass, and other pieces of land in bluegrass and cultivated crops.

* * *

"One out of every four acres of cropland in New York State has natural imperfections in drainage," Prof. P. J. Zwerman, an agronomist at Cornell University stated.

When a soil's internal drainage is poor, water tables are close to the soil surface during winter and spring, Dr. Zwerman continued. Substantially decreased yields result from high water tables and drainage imperfections. Under some cropping systems incomes from areas with poor drainage lag behind moderately well-drained areas by as much as nine dollars per acre each year.

* * *

Twenty miles of ditch walking brought Dr. F. J. Carlisle, Jr. to a conclusion about why soils are poorly drained in New York's southern tier of counties.

As a graduate student working in Cornell University's agronomy department, Carlisle traversed miles of gas pipeline ditch in New York State studying layers of soil (horizons) visible in the ditch's side.

He concluded that the dense layer up to three feet thick found within a foot or 18 inches of the soil surface accounts for most of the poor

SODIUM TEST

R. P. Matelski and C. H. Yien of the Nebraska Agricultural Experiment Station have developed a rapid method for determining the amount of sodium in soils.

As reported at ASA, Matelski and Yien said one minute determinations could be made in the field or laboratory by mixing a small amount of soil with a zinc uranyl acetate solution in a small paper cup (or on a spot plate). Rate and intensity of fluorescence—indicating the amount of sodium in the soil—is measured with a commercial portable fluorescent meter.

Winners in the 1954 essay contest for college students in agronomy, sponsored annually by the American Potash Institute and the American Society of Agronomy, are shown above. From left to right: first place winner, Samuel G. Carmer, Cornell University, Ithaca, N. Y.; Jack S. Carter, associate professor of agronomy, N. Dak. State College, Fargo, N. Dak., and chairman of the committee in charge of the contest; second place winner, Bert L. Bohmont, University of Wyoming, Laramie, Wyo.; third place winner, Robert Dunford, Utah State Agricultural College, Logan, Utah; sixth place winner, Kenneth Munkres, Kansas State College, Manhattan, Kans.; fifth place winner, Robert P. Chesney, Oklahoma A & M College, Stillwater, Okla. Winners were announced at the annual meeting of the American Society of Agronomy last month in St. Paul. Carmer's winning essay, "Invasion by Rocket," dealt with problems caused by yellow rocket, a particularly bad weed in northeastern meadows and winter grain fields.

and imperfect drainage found in the soils of hill lands in the Southern tier.

This layer, or fragipan, is so dense that little room remains for water. Pore space is low in fragipans. Root penetration is slight since water availablity is low. He found that water penetrated this layer only because of vertical cracks spaced about a foot apart.

* * *

Soil fertility is more important than irrigation in obtaining high pasture yields in New York State's southern tier hill lands George R. Free of the Agricultural Research Service, USDA, declared. Nitrogen was the most important fertilizer element in increasing yields of ladino clover-orchard grass pasture plots.

* * *

Recent tests by D. L. Myhre, O. J. Attoe, and W. B. Ogden, University of Wisconsin, show that the percentage of potassium in cured tobacco leaves should be equal to or greater than the combined percentages of nitrogen, chlorine, and sulfur for a burn of five or more seconds (considered satisfactory burn for cigar binder).

For the tabacco grower, these results point up the importance of using fertilizers with large amounts of potassium and as little chlorine and sulfur as possible. Enough nitrogen is needed to produce good growth and quality, but the amount applied must not be so large that it is detrimental to the burn. The rate of burn makes a difference in the price the tobacco grower gets for his crop.

* * *

Including trace elements such as boron, copper, manganese and zinc in fertilizers is not necessary in Minnesota today.

The only exceptions might be for such high value crops as celery and rutabagas which have high trace element needs. This is especially true on peat or muck soils.

John F. Mulvehill and J. M. Mac Gregor, University of Minnesota soil scientists, reported these findings.

* * *

Preliminary studies suggest that injected liquid nitrogen dioxide is a satisfactory source of nitrogen fertilizer.

This finding was reported by two University of California scientists, D. G. Aldrich and J. R. Buchanan.

* * *

If you're going to use rock phosphate, get it on the field at least a year before you lime.

It takes a rather acid soil to make the phosphorus in rock phosphate available to plants, according to Roscoe Ellis, Jr., M. A. Quader, and Emil Truog, University of Wisconsin soils scientists.

* * *

Heavy fertilizer applications for pasture and hay crops ought to be well-balanced, containing the proper proportions of nitrogen, potassium, and phosphorus for the particular type of soil in the field. Otherwise, the nutritive value of the crop may be lowered.

W. F. Wedin told the group about experiments he conducted in 1952, where guinea pigs were fed rations of ladino clover grown on various soil types which were either fertilized heavily or unfertilized. The growth of the guinea pigs indicated the nutritive value of the forage.

* * *

What happens to the phosphate fertilizer that crops don't use?

According to soil scientists, it forms phosphate crystals that don't wash away very easily. J. A. Kittrick and M. L. Jackson, University of Wisconsin reported details of the research on phosphates in soils.

* * *

Research in Ohio has shown the way to grow legumes and grass between corn rows successfully. **Speaking at the annual Soil Science Society of America meeting,** J. L. Haynes of the Ohio Agricultural Experiment Station declared there are three steps to take in getting a good stand of interplanted grass or legume.

Most important of these is to widen the interspaces between the corn plants to help seedling growth. The other two steps are: use bandseeding instead of broadcasting the seed, and advance the planting date.

* * *

Interplanting wheat in widely spaced corn rows has two marked advantages over the conventional practice.

G. H. Stringfield, cooperating with the Ohio Agricultural Experiment Station, said this method brings better wheat crops because it allows more timely seeding, and at the same time it results in more orderly

Need Multiwall Bags FAST?

Fulton can ship stock sizes at once from all these plants:

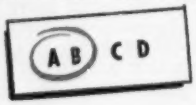
ATLANTA
DALLAS
DENVER
KANSAS CITY
LOS ANGELES
MINNEAPOLIS
NEW ORLEANS
ST. LOUIS
SAVANNAH

All Fulton plants are equipped to imprint multiwall paper bags with your brand.

Whatever type of bag you need — Fulton serves you better

BURLAP FROM ONLY TOP-GRADED MILLS

Burlap mills are classified A, B, C, and D. Fulton buys *only* from AB mills, to be sure your finished bags are *never* made from burlap with hidden weakness.



Note: You can get regular burlap — and Ful-Brite, the brighter burlap — from Fulton. Ful-Brite is a prestige package for your premium products.

COTTON CONTROLLED FROM RAW MATERIAL TO FINISH

From the raw cotton to the finished bag, Fulton guards quality. Weight and weave of every fabric are tested to assure uniformity in all bags.

Automatic point-of-sale merchandising... Fulton's fashion prints can tip the scales in favor of YOUR brand when the consumer buys.

FOR TOUGHER JOBS—TOUGHER WPPL BAGS

These waterproof lined textile bags set up a protective barrier between your product and outside conditions. The inner sheets in Fulton WPPL bags are moisture resistant, and also prevent transfer of odors. Your choice of paper or polyethylene laminated to cotton or burlap.

Fulton specialists can recommend which type will do the best job — most economically—for each of your products.

Fulton
BAG & COTTON MILLS

ATLANTA • CHICAGO • DALLAS • DENVER • KANSAS CITY • LOS ANGELES
MINNEAPOLIS • NEW ORLEANS • NEW YORK • OKLAHOMA CITY
PHOENIX • ST. LOUIS • SAN FRANCISCO • SAVANNAH • WINTER HAVEN

fall work on the farm.

In most cases there is no penalty to corn yields, the agronomist stated, particularly if the farmer uses full season hybrids.

* * *

Planting ordinary rye too close to commercial tetraploid varieties, such as Tetra Petkus, cuts yields of both types drastically.

That's the conclusion drawn by F. K. S. Koo, research fellow, and W. M. Meyers, head, the University of Minnesota Agronomy Department.

When the two types of rye are planted close together they interpollinate, cutting yields.

* * *

Topsoiling is not necessary in establishing and maintaining roadside vegetation on highway projects in the Northeast, according to Herbert C. Nikola and Stephen J. Toth, soils scientists at the Agricultural Experiment Station, Rutgers University, based heir conclusion on detailed analyses of 88 outstanding highway projects and on field trials on New Jersey and New York highways.

Nitrogen is of prime importance in establishing and maintaining roadside vegetation, however, and surface applications give as good results as mixing with soil from surface to plow depth. For maintenance, nitrogen is needed at rates of 30 to 50 pounds an acre, together with small amounts of phosphorus and potash. Maintenance liming was found to be unnecessary.

* * *

"The public is thoroughly convinced that we can do miracles," said C. J. Willard in his presidential address.

"But," he added, "You ain't seen nothin' yet!" in relating the rapid strides in the complex field of weed control since the chemical weed killer, 2, 4-D, was discovered 10 years ago. Willard is forage crops specialist at Ohio State University, Columbus.

"Thirty years ago when I received weeds for identification, the senders asked, 'What is it and what can I do about it?' Now they say, 'What is it and what can I put on it that will kill it and not hurt my crops?,'" Willard said.

* * *

Refinements in a technique for determining the clay minerals in a soil sample by use of X-rays were reported by Dr. C. L. Garey. The research is a project of the Arkansas Agricultural Experiment Station, supported in part by a grant from the Olin-Mathieson Company, Inc.

In Dr. Garey's study of artificial mixtures of kaolinite and montmorillonite (two clays found in most soils), an increase in the percentage of one mineral always resulted in a higher peak on the X-ray diagram for that mineral relative to the other. By following the technique he used, it should be possible to estimate the amount of the two clays in an unknown soil sample by comparing X-ray measurements of the sample with curves worked out in his study.

* * *

Radioactive elements—a product of the atomic age—are giving farmers a clue as to the effects of fertilizer on the soil as well as on crops.

Seven-year experiments at the University of Minnesota, using radioactive phosphate the seventh year, show three things:

1. If the crops do not use all the phosphate applied, a considerable portion remains in a form that plants can use later.

2. However, with one form—rock phosphate—only small amounts are usable by crops later.

3. Mixed legume hay showed consistent gains in yields over the entire period from those sources of fertilizer in which the phosphate was in available form.

A. C. Caldwell and F. L. Hammers of the University's Soils Department and Andrew Hustrulid of the University's Agricultural Engineering Department made the report.

* * *

"The European people with whom I worked sincerely appreciated American cooperation and aid, but they resented being told that they should," D. R. Dodd of Hedgesville, W. Va., told the meeting.

Dodd, emeritus professor of agronomy at Ohio State University, spent nine months during 1953 in western European and Mediterranean countries, serving as a consultant in pasture and forage production and utilization for the U. S. Foreign Operations Administration.

"The people in these countries feel that the common good is more important than who gets the credit," Dodd reported. "They are inclined to doubt the sincerity of people who are overly zealous about full credit."

* * *

The possibility that the United States may be host country to an International Congress of Soil Science in 1959 or 1960 was advanced by Charles E. Kellogg, Assistant Administrator for Soil Survey in the U. S. Department of Agriculture, who presented delegates with a report of the Fifth International Congress of Soil Science, held in Leopoldville, Belgian Congo, in August 1954.

The proposal for a Congress to be held in the United States in 1959 or 1960 is under consideration, Kellogg said. It would be the seventh such world meeting. The sixth is to be held in Paris, France, in 1956. "If we intend to extend an invitation at the Paris meeting," he continued, "we should make up our minds as soon as possible."

INDUSTRY MEN HONORED

Honors were accorded four fertilizer industry members at the recent American Society of Agronomy meeting at St. Paul. For the first time in the history of the society, four scientists from allied agricultural industries were included in the 24 men who were named fellows by the agronomy group. The four men so honored were: Dr. Russell Coleman, NFA president; H. H. (Bert) Tucker, formerly executive director of the recently-dissolved Coke Oven Ammonia Research Bureau; John R. (Dugan) Taylor, Deere & Co.; and Samuel D. Gray, American Potash Institute.

Midwest Soil MEETING ATTRACTS 200















Attendance passed the 200 mark at the Middle West Soil Improvement Committee's annual meeting November 4, at the LaSalle Hotel in Chicago.

H. S. Vorhes, Virginia-Carolina Chemical Corp., Dubuque, Iowa, was re-elected president for the 1954-55 term. W. M. Newman, Price Chemical Co., Louisville, Kentucky, was re-elected vice president, and R. G. Fitzgerald, Smith-Douglass Co., Inc. treasurer.

Directors chosen for a 3-year term were: Kirk Wagenseller, Swift and Co., Cleveland, Ohio, re-elected, W. M. Newman, re-elected, Dan Williams, Minnesota Farm Bureau Service Co., St. Paul, Minnesota and George Kingsbury, Kingsbury & Co., Indianapolis, Indiana.

In attendance at the meeting were representatives of the MWSIC's 63 active and associate members and invited guests.

Key To Pictures

1. Back row—left to right: Marshall Smith, Smith Agricultural Chemical Co.; H. S. Vorhes, Virginia-Carolina Chemical Co.; Richard Bennett, Farm Fertilizers, Inc.; Dan Williams, Minnesota Farm Bureau Service; A. R. Mullin, Indiana Farm Bureau Coop. Front row—left to right: Z. H. Beers, Middle West Soil Improvement Committees; Kirk Wagenseller, Swift & Co.; R. G. Fitzgerald, Smith Douglass Co.; J. D. Zigler, International Minerals & Chemical Co.; G. Kingsbury, Kingsbury and Sons Co.; Wm. M. Newman, Price Chemical Co. 2. Left to right: R. G. Fitzgerald, treasurer of MWSIC; H. S. Vorhes, president of MWSIC, and Z. H. Beers, secretary. 3. G. Kingsbury, Kingsbury and Sons; W. Farley, Smith Agricultural Chemical Co.; J. Hart, Spencer Chemical Co. 4. C. Walker, Albemarle Paper Mfg. Co.; J. Walter Harding, Federal Chemical Co.; Wm. Thorne, Hydrocarbon Products. 5. Ira Fears, Commonwealth Fertilizer; J. Hicks, Commonwealth Fertilizer; G. Van Deren, Bluegrass Plant Foods, Inc. 6. R. Bennett, Farm Fertilizers; J. D. Zigler, International Minerals and Chemical Co. 7. George Barclay and Z. H. Beers, Middle West Soil Improvement Committee. 8. S. R. Babylon, Baugh & Sons; A. R. Mullin, Indiana Farm Bureau. 9. Wm. N. Newman, Price Chemical Co.; W. B. Copeland, Smith-Douglass Co. 10. C. E. Trunkey, Middle West Soil Improvement Committee; Frank Nelson, Rath Packing Co. 11. J. A. Silkman, Swift & Co.; A. N. D'Aubert, Swift & Co.; Kirk Wagenseller, Swift & Co. 12. Y. Bonnett, Hoblit-Bonnett Fertilizer Co..; D. Williams, Minnesota Farm Bureau; Ray Pavlak, Farmco Service.. 13. Marshall Smith, Smith Agricultural Chemical Co.; E. C. Horne, Bradley & Baker; J. K. Sparkman, U. S. Phosphoric Products; G. G. Bradshaw, Swift & Co. 14. Cash Cahill, Rath Packing Co.; J. D. Stewart, Jr., Federal Chemical Co. 15. T. J. White, Bradley & Baker; W. Klossner, Swift & Co.

On the agenda were reports by the treasurer, R. G. Fitzgerald, the auditing committee, headed by J. D. Stewart, Federal Chemical Co., Louisville, Kentucky.

Members approved a budget for 1954-55.

President Vorhes then called on Z. H. Beers, MWSIC executive secretary for his annual report summarizing the committee's 1954 educational program and detailing plans for new and expanded activities in 1955.

Beers cited results of the committee's 1954 educational program in newspapers, farm magazines, and via radio stations, film strips and illustrated folders. He reported on fertilizer research projects which the committee helps sponsor at nine Midwestern agricultural colleges, on field work during the year and on contacts and cooperation with agronomists.

Beers said that with the addition of Charles E. Turnkey to the staff, expanded activities will be launched in 1955. Among these will be the development of illustrated and text material for TV; the preparation of new color folders on building crop yields per acre, cutting costs and increasing profits by the use of fertilizer; the release of new color film strips to vocational agricultural teachers, schools, county agents and farm groups; and increased contact with agronomists in gathering and processing material for educational use.

Mid West Annual Meeting Feb. 17-18

Preparations are being speeded for the annual joint meeting of Midwestern agronomists and fertilizer industry representatives at the Palmer House, Chicago, Thursday and Friday, February 17 and 18, 1955.

The meeting is sponsored by the Middle West Soil Improvement Committee.

Tentative plans call for a round table discussion of ways to cut cost of production of corn, wheat, and other small grains, and forage crops. This would make-up one half day of the program. Reports of specific research results and a report of new developments in fertilizer technology for the benefit of the college men are planned for the other half day.

Dr. F. W. Smith of Kansas State College will be chairman of the meeting. H. S. Vorhes, president of the Middle West Soil Improvement Committee and Z. H. Beers, executive secretary will welcome the soils men and visitors.

Because of the steadily increasing importance of the meeting, the better part of two days will be devoted to the program rather than scheduling the whole session for one day as in the past. The session will open on Thursday afternoon, February 16, and run through noon on Friday, February 18.

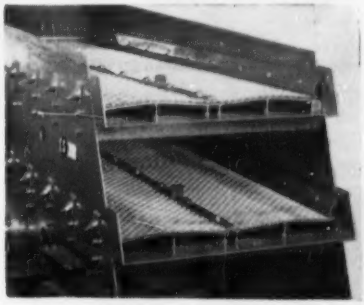
Preceding the joint meeting, the agronomists will attend a series of two day meetings of the North Central Soils Research Committee.

As was the case last year, soils extension men from each of the 13 MWSIC states have been invited to join the research men in attending the joint meeting.

Beers pointed out that while the February meeting is primarily for the agronomists and fertilizer industry men, other interested people are welcome to attend. This includes representatives of companies in the farm equipment, supplies and transportation and related fields.

The annual joint meeting has expanded steadily in scope, interest and attendance over the years. More than 400 attended the 1954 February meeting and an even greater attendance is expected at the forthcoming one.

Simplicity Engineering Company announces that its W-deck screen is now available on all Simplicity Gyrating Screens. The W-deck screen permits a more even flow of material across the screen surface, results in more screening area utilized, thus better screening of materials is obtained and increased screen life by even wear.



SO. ATLANTIC ANHYDROUS CONFERENCE

Above: Dr. J. Walter Fitts, head, Division of Soil Testing of the N. C. State Department of Agriculture, Raleigh, (third from left) discusses anhydrous ammonia for direct application as a nitrogen fertilizer with J. S. Whittington, Frank W. Thomas, Jr., and T. H. Dobbin, executives of Olin Mathieson Chemical Corporation's nitrogen division. The photograph was taken at the South Atlantic Research Conference on anhydrous ammonia, held on the North Carolina State College campus October 26.

Below: Jack Criswell, executive vice president, Agricultural Ammonia Institute, Memphis, E. W. Thomas, A.A.I. President, Booneville, Missouri, H. Alex Vann, Suburban Farm Service Co., Winton, N. C., Dr. E. T. York, Jr., head, agronomy department, North Carolina State College and J. C. Cook, Olin Mathieson Chemical Corporation, Williamston, N. C.

Soil scientists from South Atlantic states exchanged experiences in the use of anhydrous ammonia as a direct application nitrogen fertilizer and determined lines along which additional research may be conducted at the South Atlantic Research Conference on Anhydrous Ammonia, October 26, at Raleigh, North Carolina.

Planned as the first of an annual series, the conference was sponsored by the Carolinas-Virginia Agricultural Ammonia Association, a regional group affiliated with the national Agricultural Ammonia Institute.

Host of the conference was the Department of Agronomy of North Carolina State College of which Dr. E. T. York, Jr. is the head and Dr. E. R. Collins is professor in charge of agronomy extension work.

Dr. Arthur M. Smith, chief agriculturist of Olin Mathieson Chemical Corporation as chairman of the program committee arranged a program dealing with all phases of anhydrous ammonia as a direct application nitrogen fertilizer.

Approximately 200 college, station and extension agronomists and research representatives of ammonia and fertilizer producers and distributors participated in the conference.

In roundtable discussions, the group sought to determine what research is now in progress, what results and information have been obtained, what recommendations for use can be made, and what further research should be started.

Discussion leaders explained the reactions of anhydrous ammonia in the soil and the reactions by which it is retained and made available to crops. In review of biological effects, the stimulation to soil bacteria and the reduction of fungus disease organisms and nemotodes was explained.

The conference clearly developed the need for even larger applications of nitrogen for corn and cotton than most farmers in the South Atlantic States now use. Also, speakers brought out that anhydrous ammonia is giving farmers in the area as good results as other nitrogen fertilizers which sometimes are more expensive.

The opportunity for increasing the carrying capacity of pastures and the protein content of pasture grasses and hay was highlighted in a graphic presentation. The discussion pointed up particularly the difference in the ability of various Southern pastures grasses to make use of fertilizer nitrogen and the available amount of water.

Problems relating to the placement of nitrogen fertilizers applied to small grain were reviewed, as were those related to time and rate of application. In weighing the merits of preplant versus top dressing, speakers agreed that where the moisture content of the soil remains high during the late winter and early spring period, preplant applications may be preferred.

In another discussion, the nitrogen requirements of the leafy vegetable plants were reviewed, along with the difficulties resulting from various times, rates and methods of application.

Throughout the discussions on the use of anhydrous ammonia, it was repeatedly emphasized that as the nitrogen applications per acre are increased, phosphorus, potash and lime applications should be correspondingly increased for the most profitable results.

The soil scientists who served as discussion leaders and their topics were: Dr. W. G. Blue, Florida Agricultural Experiment Station, Chemical Effects of NH_3; Dr. Charles F. Eno, Florida Agricultural Experiment Station, Biological Effects; Dr.

(Continued on page 64)

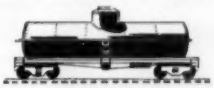
PHILLIPS OFFERS

5 FERTILIZER MATERIALS FOR HIGH ANALYSIS MIXTURES

1 AMMONIUM SULFATE

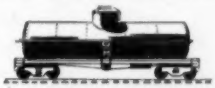
New Premium Quality Phillips *66* Ammonium Sulfate contains 21% nitrogen, 23.8% sulfur. It is *dry*-cured to remove excess moisture—prevent caking. Uniform, dust-free crystals flow freely—mix easily. Ideal for all analyses of mixed goods and for direct application. Available in bags or bulk.

2 ANHYDROUS AMMONIA



Phillips *66* Agricultural Ammonia contains 82% nitrogen. It's a convenient, economical source of nitrogen for formulation. Tank car shipments are assured to Phillips contract customers by Phillips huge production facilities in the Texas Panhandle and at Adams Terminal near Houston, Texas.

3 NITROGEN SOLUTIONS



Get more N per dollar! There are three Phillips *66* Nitrogen Solutions for use in preparation of high-analysis fertilizers and the ammoniation of superphosphate. These solutions keep handling costs low, help rapid, thorough curing.

4 AMMONIUM NITRATE

Phillips *66* Prilled Ammonium Nitrate contains 33% nitrogen. The small, coated prills or pellets resist caking . . . handle easily. Depend on Phillips *66* Prilled Ammonium Nitrate for uniform, free-flowing properties in formulations and top-notch crop response as a direct application material.

5 TRIPLE SUPERPHOSPHATE

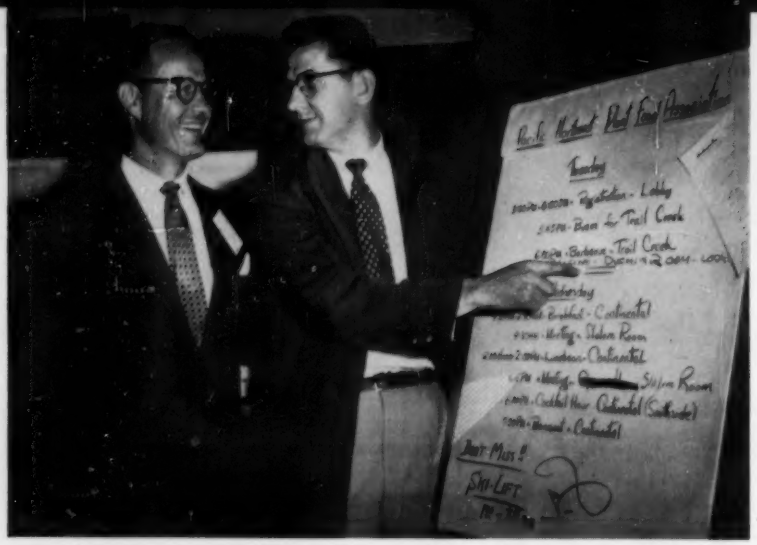
Phillips *66* Triple Superphosphate contains 46% available phosphoric acid. Uniform, free-flowing material . . . ideal for use in formulation of high analysis fertilizers and for direct application. Available in bags or bulk.

PHILLIPS CHEMICAL COMPANY

A Subsidiary of Phillips Petroleum Company, Bartlesville, Oklahoma

Offices in:

AMARILLO, TEX.—*First Nat'l Bank Bldg.*
BARTLESVILLE, OKLA.—*Adams Bldg.*
CHICAGO, ILL.—*7 South Dearborn St.*
DENVER, COLO.—*1375 Kearney Ave.*
DES MOINES, IOWA—*606 Hubbell Bldg.*
HOUSTON, TEX.—*1020 E. Holcombe Blvd.*
INDIANAPOLIS, IND.—*1112 N. Pennsylvania St.*
KANSAS CITY, MO.—*500 West 39th St.*
MINNEAPOLIS, MINN.—*212 Sixth St. South*
NEW YORK, N. Y.—*80 Broadway*
OMAHA, NEB.—*WOW Building*
PASADENA, CALIF.—*604 Citizens Bank Bldg.*
SALT LAKE CITY, UTAH—*68 South Main*
SPOKANE, WASH.—*521 E. Sprague Ave.*
ST. LOUIS, MO.—*4251 Lindell Blvd.*
TAMPA, FLA.—*1214 South Dale Mabry*
TULSA, OKLA.—*1708 Utica Square*
WICHITA, KAN.—*501 KFH Building*



W. J. F. Francis (left), western general sales manager for American Potash & Chemical Corporation, and Tod Tremblay, of Washington Farms Co-op, check agenda during recent Fifth Annual Convention of the Pacific Northwest Plant Food Association, held at Sun Valley, Idaho.

MARTIN HEADS PACIFIC N. W. GROUP

Sid Martin of Yakima Valley Spray Co., Yakima, Wash., was elected president of the Pacific Northwest Plant Food Association at its annual convention in Sun Valley, Idaho. Frank Meeker of Meeker-Hughes Co., Salem, Oregon, was elected vice president and R. W. Finch of Swift & Co., Portland, was elected treasurer.

Additional directors elected were: F. W. Parcher, Nulife Fertilizers, Tacoma, Wash.; Frank Burlingham, Woodburn Feed & Supply Co., Woodburn, Oregon; E. W. Hansen, N'land Industries, Lewiston, Idaho; and Ben McCollum, J. R. Simplot Co., Pocatello, Idaho.

Attendance at the convention was approximately 200, largest in the four-year history of the Association.

The subject most talked about in the lobbies later was the presentation by Jack Hood, chairman of the agricultural committee of the Washington State Bankers Association, on Financing Fertilizer Sales. He stressed that local banks should consider it part of their responsibility to the betterment of the community to finance sound fertilizer programs, within the limits of their legal restrictions.

Joe Culpepper of Spencer Chemical, talking on Sales and Merchandising of Fertilizer, laid stress on the fact that our industry is in a unique position. It has a product which can benefit everybody, which will cut the cost of food production and lower that cost to the consumer.

H. J. Gramlich, Chicago and Northwestern Railway, was the banquet speaker.

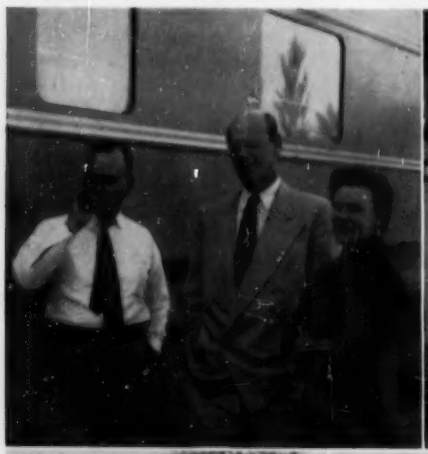
W. J. F. Francis, western general sales manager of American Potash & Chemical Corporation, said the large areas being opened to agriculture in the central Columbia River basin "will add tremendously to the income of the area with a resultant increase in the use of fertilizers."

"Recent developments in connection with the increased use of ammonia will serve to emphasize the increasing need for and use of complete plant foods in the expanding requirements of the Pacific Northwest," Francis said.

Outlook for the coming year in the three-state area generally was believed to be good, continuing a general rise during 1954.

The Association approved a farm demonstration project for Idaho, with the farm to be selected in the neighborhood of San Point. One thousand dollars will be contributed for the purchase of fertilizer on the project, to be under the supervision of the Soil Improvement Committee, of which B. T. Tremblay is chairman.

Boise, Idaho, was chosen as the site for the summer Regional Fer-



Upper left: Ed Asbill and Mr. & Mrs. Rod Eichman. **Upper right:** Harold Reed, of Simplot Soilbuilders, relaxes in a rocking chair. **Lower left:** Dick Rowden of Bemis Bro. Bag Co. **Lower right:** Mrs. Ed Asbill, Mrs. Elizabeth Ferron, and Mrs. Leon Jackson.

tilizer Conference next June 28, 29 and 30. C. A. Painter will be in charge of the program.

Bend, Oregon, was selected for the location of the annual convention in 1955, with the dates to be set either in the latter part of August or the first part of November.

300 AT SOUTH CAROLINA MEET

More efficient use of fertilizer and better farming resulting in more profitable production were the high points stressed at the annual South Carolina Fertilizer Conference held at Clemson College November 3-4.

The 2-day meeting which ended at noon November 4 was attended by more than 300 representatives of the fertilizer industry.

Bruce D. Cloaninger, head of the department of Fertilizer Inspection and Analysis, and who was in charge of the arrangements committee, said that this was one of the best attended conferences the group has ever held.

Dr. M. D. Farrar, dean of the School of Agriculture, struck the keynote of the meeting in his opening remarks on the afternoon of November 3. Dr. Farrar stressed the importance of better farming through more efficient use of fertilizer resulting in more profitable production.

A feature of the conference was a tour of the college campus and experiment station pastures. Dr. W. A. King of the Clemson Dairy Department was on hand to conduct the pasture tour which included some of the winter grazing plots on the experiment station dairy farm. Dr. Farrar conducted the tour of the campus which included a look at the recently completed student barracks. The tour also included the new agricultural center which is now under construction.

A highlight of the meeting was a talk by Dr. Ivan E. Miles, leader of Extension Agronomy Work at Mississippi State College. Dr. Miles spoke at a banquet held for the group at the Clemson House Hotel Wednesday night November 3. He was introduced by Dr. W. R. Paden, agronomist, South Carolina Experiment Station, Clemson, after Dr. R. F. Poole, president of Clemson College, had welcomed the group to the campus.

Featured speakers who appeared on the program during the conference included: Dr. M. D. Farrar, Clemson Dean of Agriculture; J. N. Davis, Epting Distributing Company, Leesville, S. C.; Dr. H. J. Webb, chief chemist, Clemson Fertilizer Department; Dr. E. R. Collins, in charge Agronomy Extension Work, North Carolina State College; Dr. H. G. Allbritten, agronomist, South Carolina Experiment Station, Clemson; Dr. J. Fielding Reed, American Potash Institute, Atlanta, Georgia; Dr. R. W. Carter, director, Livestock Sanitary Work, Columbia; Dr. O. B. Garrison, director, South Carolina Agricultural Experiment Station: N. R. Page, associate agronomist, South Carolina Agricultural Experiment Station; J. F. Bullock, USDA agronomist, Pee Dee Experiment Station, Florence, S. C.; J. M. Lewis, extension tobacco specialist, Florence, S. C.; Dr. J. B. Pitner, head, Agronomy Department, Clemson; Dr. J. H. Cochran, head, Entomology and Zoology Department, Clemson; J. E. Youngblood, chief, Extension Division Marketing, Columbia, S. C.; and Henry S. Johnson, director of information, Farm Credit Administration, Columbia, S. C.

NEW ENGLAND CONFERENCE

The only way farmers can keep production costs low and make profits in the face of high fixed costs is to use increasing amounts of fertilizer per acre, Malcolm H. McVickar, chief agronomist of The National Fertilizer Association, told delegates to the New England Fertilizer Conference in Burlington, Vermont, November 3.

The conference, an annual affair, is sponsored by The National Fertilizer Association in cooperation with agricultural colleges in the New England States.

Tracing fertilizer facts and figures through the past years, Dr. McVickar predicted that fertilizer usage in New England—and throughout the country—will, and must, increase.

The NFA agronomist pointed out that while New England fertilizer consumption is decreasing percentage-wise relative to that of the whole country, this does not mean that farmers are using less fertilizer today than they have in the past. The six-state area is merely using less of the total U. S. production. New England farmers applied an

Group registering at the annual S. C. Fertilizer Conference held at Clemson College November 3-4, and featured speakers: Dr. M. D. Farrar, dean, Clemson School of Agriculture; B. D. Cloaninger, head, Fertilizer Department, Clemson; Dr. Ivan E. Miles, leader Agronomy Extension Work, Mississippi State College; and Dr. R. F. Poole, president, Clemson College.

average of 118 pounds of fertilizer per acre in 1940; by 1950 they had more than doubled their average application to 245 pounds per acre.

Speaking on the subject, "Fertilizers and Materials—Supply and Demand for 1954-55," Dr. McVickar presented outlook summaries for the three primary plant food elements—nitrogen, phosphate, and potash. Nitrogen available for farm use in the coming year will be about 10 percent more than that available last year and double the amount for 1950.

While phosphate supplies will remain about the same as last year's, potash supplies are expected to be about eight percent greater than in 1953-54.

Dr. McVickar emphasized the fact that the price of fertilizer has risen less than that of any other production item that farmers use. "Fertilizer prices in terms of plant food content have advanced only 13 percent since 1935," he said. "The price of all items farmers buy has advanced 125 percent in the same period."

The New England Fertilizer Conference was held at the Oakledge Hotel on Lake Champlain November 2 and 3. Various phases of fertilization in relation to northeastern agriculture were discussed at the meeting of soil specialists and representatives of the fertilizer industry.

31 STATES AT SAFETY MEETING

At the National Safety Congress in Chicago in the Fertilizer Section, the following states, districts and foreign countries were represented:

Alabama	Arkansas	California	Dist. of Col.	Florida	Georgia
Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky
Louisiana	Maryland	Michigan	Minnesota	Mississippi	Missouri
Montana	Nebraska	New York	New Mexico	Ohio	Oklahoma
Pennsylvania	Tennessee	Texas	Virginia	West Virginia	Wisconsin
Canada					

Illinois had the largest number, with 33.

The goal of the Fertilizer Safety Section for 1955 is to have representation from all states.

EXPECT 1000 AT AMMONIA INSTITUTE

The Agricultural Ammonia Institute, is preparing for an attendance of more than 1,000 for its fourth annual convention in New Orleans, December 6, 7, and 8.

The Convention and Trade Show of latest developments in the technical branch of the industry will be held at the Jung Hotel.

From a modest gathering of 350 at the first convention, interest in the Institute was evidenced by a throng of over 850 at St. Louis last year.

Some of the nation's foremost agricultural authorities are scheduled to appear on this year's program at New Orleans. Members and their wives, as well as others interested in the industry, are expected from 40 or more states.

The Trade Show will begin at 9 Monday morning, December 6. Regular convention activities will also start Monday with morning registration, committee meetings and a kickoff luncheon with Jack F. Criswell, AAI executive vice president, presiding.

Ed Lipscomb of Memphis, director of public relations and sales promotion for the National Cotton Council, will deliver the principal address Monday afternoon, E. W. Thomas of Boonville, Missouri, Institute President, will deliver his message and Dr. William A. Albrecht of Columbia, Missouri, chairman of the Department of Soils at the University of Missouri College of Agriculture, will report on "Fertilizer's Services in Plant Nutrition."

Tuesday's lineup of events includes talks by Dr. Russell Coleman of Washington, president of the National Fertilizer Association, and Senator Allen J. Ellender, senior senator from Louisiana. During the afternoon, delegates will tour the $50,000,000 Fortier ammonia plant of American Cyanamid Company. Tully W. Talbot of Audubon, Iowa, AAI director, will preside over the mid-afternoon panel Wednesday and Dr. Firman E. Bear of New Brunswick, New Jersey, editor of **Soil Science** and retired chairman of the Rutgers University Soils Department, will speak on "Some Facts About Nitrogen Fertilizers." Following the business meetings at 6 Wednesday night, convention-goers will enjoy the gala annual banquet, with dancing and a floor show.

While their husbands are engrossed in the serious business sessions, wives of the convention delegates will tour gay, colorful New Orleans and attend a special Agricultural Ammonia handicap race at the New Orleans track.

Siftaire New Chemurgic Process Development

Development of an efficient, low-cost process for removing industrial odors and fumes and recovering valuable vapors from plant exhausts was announced Nov. 17 by Herbert B. Larner, President of Chemurgic Process Corporation, 55 West 42 St., New York.

The process, called Siftaire, makes use of the lung-protecting principles of the gas mask. According to Mr. Larner, it represents the first practical industrial application of activated carbon for cleaning hot, wet exhausts and recovering costly vapors, while permitting simple, inexpensive regeneration of the carbon.

The process is based on inventions recently patented by Dr. Frank L. Schneider, internationally known microchemist and Professor of Chemistry at Queens College, New York.

Quality Materials

Modern, Efficient Plants and Equipment

Exacting Standards and Rigid Inspection

Brilliant, Multi Color Brand Printing

Dependable Delivery Service.....make

Hammond Multi-Walls

THE FINEST SHIPPING SACKS OBTAINABLE FOR YOUR PRODUCTS

Hammond Multi-Wall Bags . . . shipping sacks of highest quality . . . are produced in three modernly equipped, strategically located plants. Our sales representatives, with offices in 11 principal cities, have a thorough understanding of your packaging problems and are at your service at all times. Why not call in the one nearest you today, from the list below. Let us show you what Hammond's quality and service can mean to you.

"TREES ARE A CROP"

For Multi-Wall bags, "Make it a Habit to Depend on Hammond"

HAMMOND BAG & PAPER COMPANY General Offices: Wellsburg, W. Va.

Plants in Wellsburg, W.Va., Pine Bluff, Ark. and Charlotte, N.C.

Representatives in the following cities: New York, N. Y., Chicago, Ill., Minneapolis, Minn., Kansas City, Mo., Cleveland, Ohio, Atlanta, Ga., Washington, D.C., Dallas, Texas, Charlotte, N. C., Ligonier, Pa., Bluefield, Va.

RECORD BREAKING ATTENDANCE MARKS CALIFORNIA MEETING

California Fertilizer Association's thirty-first annual convention, held at Coronado on November 15 and 16 attracted an all time record attendance of 450. Delegates came from many sections of the U. S. and Canada. Millard E. McCollam, western states manager of American Potash Institute, and for many years chairman of the Association's Soil Improvement Committee, was honored as The "Man-of-the-Year".

Francis R. Wilcox, assistant general manager and treasurer of Sunkist Growers, Los Angeles, speaking following luncheon on Monday, suggested that farmers should return to the sound premise of raising crops for consumption rather than for storage in government warehouses. Meanwhile, he warned, farmers are pricing themselves out of most world markets. Last year, Wilcox headed a trade mission of the Department of Agriculture to northern Europe, and he feels that stored surpluses is the number one problem of our farm economy, and suggested acceptance of foreign currency from countries which are sharing in our aid program, using this money to buy our surpluses for local consumption on a commercial basis.

Jesse Tapp, vice chairman of the board of directors, Bank of America, Los Angeles, predicted a big new market for commercial fertilizers for use on pastures and rangeland. He said this trend will assure the high level of livestock production which will be needed to meet food demands of our rapidly growing population. He praised the flexible support program of Secretary Benson as a boon to California farmers, since rigid controls have always hit newer production areas the hardest. He predicted that 1955 will be a good farm year for California and for the nation as a whole.

W. R. Allstetter, vice president of NFA, Washington, D. C., exhibited two films, one a television short showing typical plant food deficiency symptoms, and the other a color film depicting the value derived from scientific soil testing.

Paul T. Truitt, president of APFC, Washington, D. C., presented an interesting paper on the fertilizer supply outlook and development of manufacturing facilities. He pointed out that for each of the past 16 years the fertilizer industry has marked a new consecutive high in terms of total amount of plant nutrients used. He predicted little change in general farm conditions in 1955, pointing out that the effect of smaller allowable acreages under the crop production control program will be offset by the need for providing more food and fiber for our rapidly increasing population. He expressed the feeling that the fertilizer industry will continue to supply the farmer with all the plant food which he will require from existing, building, and planned facilities, although it was pointed out that seasonal shortages of certain materials, especially heavily used mixtures, will still make it desirable for the farmer to purchase his requirements ahead of actual needs.

M. E. McCollam, Soil Improvement Committee chairman, reported on the activities of his committee during the past year, and stressed the importance of proper research and the acceptance of its results by the farmer. He reported that Arizona farmland received an average of 77 pounds of plant nutrient per acre last year, the highest in the nation. California was next with an average of 49 pounds per acre. The U. S. average was 15 pounds. He pointed out that these figures provide room for considerably more fertilizer use.

Sidney H. Bierly, CFA executive secretary and manager, prepared a paper which outlined accomplishments of the Association during the past year, and told of trends toward new materials and methods of application. During the annual business meeting, three directors were elected for three-year terms: Murray C. McNeil and William E. Snyder were re-elected to this office, and Fred Bryant of Brown and Bryant, Shafter, Calif. will replace Wm. E. Simas, Salinas, on the board. Virgil A. Frizzell, The Triangle Company, Salinas, was elected secretary, succeeding H. E. Ferguson of San Francisco. Re-elected to serve during the coming year were President B. H. Jones, Fresno; Vice President Wm. E. Snyder, Los Angeles; Treasurer Jack Baker, Los Angeles; and Executive Secretary and Manager Sidney H. Bierly, San Marino.

The ladies were guests of the Association at a cocktail party and luncheon at beautiful Kona Kai Club, on San Diego Bay, followed by an excursion of the San Diego Bay area. Cocktail parties for all delegates were sponsored by Balfour, Guthrie & Co., Ltd., and by American Potash & Chemical Corp. Shell Chemical Corp. and its ammonium sulphate selling agents, Nitrogen Division of Allied Chemical & Dye Corp. and Producers Sales Co., sponsored a sumptuous steak dinner on Monday evening. The convention ended with the annual banquet on Tuesday evening, when prizes were awarded and good food and dancing to excellent music prevailed.

Lion Issues Brochure At Barton Plant Opening

A beautifully executed brochure in color has been issued as part of the dedication of Lion Oil's new Barton Plant near New Orleans, which event was reviewed here last month. Color photographs of the plant, outside and inside dramatically show that a petrochemical operation can be functionally beautiful.

The presentation includes pictures of the El Dorado nitrogen plant and the refinery there, and of reserve development activity in fifteen states. Marketing, research and a word about the 3,000 employees completes the brochure.

NORTH CAROLINA HOLDS INDUSTRY CONFERENCE

The fertilizer industry conference held Nov. 30 at North Carolina State Colloge, Raleigh, proved another successful gathering for this group. E. T. York, Jr., head, Dept. Agronomy, presided over the one-day session.

School of Agriculture Director R. L. Lovvorn led off the program with a talk on the contribution of research to crop production in the state, followed by introduction of the college's research staff.

This group discussed specific phases of their research program concerned with soils and plant nutrition in the state. Dr. W. V. Chandler presented material on fertility studies with corn; Dr. A. C. McClung reviewed a survey of the nutrient status of North Carolina's peach orchards; minor element requirements of N. C. crops was Dr. M. E. Harward's topic; Dr. C. H. M. van Bavel presented interesting material on climate and irrigation in the state.

After luncheon, Dr. J. W. Fitts, Director, N. C. Soil Testing Division, spoke on soil tests as a guide to fertilizer usage. Final speaker on the day's program was State Commissioner of Agriculture L. Y. Ballentine, who told of the potentials for fertilizer and lime usage in North Carolina. Discussion on the job ahead wound up the one-day session.

Georgia P.F.E.S. Annual Meeting, Athens, January 18

Tuesday, January 18th. is the date of the annual meeting of the Georgia Plant Food Educational Society in Athens, Georgia. The meeting will start with registration at 1:30 P.M. The annual banquet is planned for that evening.

Highlights of the meeting include:

A discussion of the credit issue and the fertilizer industry—with guest speakers Harold Dinges of Spencer Chemical Company and Henry S. Cohen, Moultrie National Bank.

The banquet speaker is Dr. George Smith of the University of Missouri, who will discuss "Building Soil Fertility as a Basis of High Crop Production."

The Georgia Section of the American Society of Agronomy will jointly sponsor this banquet and evening program. Their annual program will follow on Wednesday January 19th.

The program for the meeting follows.

PROGRAM

TUESDAY, JANUARY 18th

1:30 P.M. Registration—Third Floor, Conner Hall.

2:00 P.M. Afternoon Session—Charles Ellis, Jr., Presiding.

Welcome—Dean C. C. Murray, Dean and Director College of Agriculture.

The Fertilizer Industry and the Georgia Extension Service—Mr. W. A. Sutton, Associate Director Agricultural Ext. Service.

The Fertilizer Industry and the State Department of Agriculture—Mr. Phil Campbell, Commissioner Ga. Dept. of Agriculture.

2:30 P.M. "The Credit Problem As It Affects Fertilizer Use." "Let's Give Credit Where Credit Is Due," Mr. Harold Dinges, Asst. General Sales Mgr. Spencer Chemical Co.

"Farmer-Banker Relations," Mr. Henry S. Cohen, Executive Vice-President, Moultrie National Bank.

Recess:

3:30 P.M. Business Session, W. A. Higginbotham, Jr., Presiding.

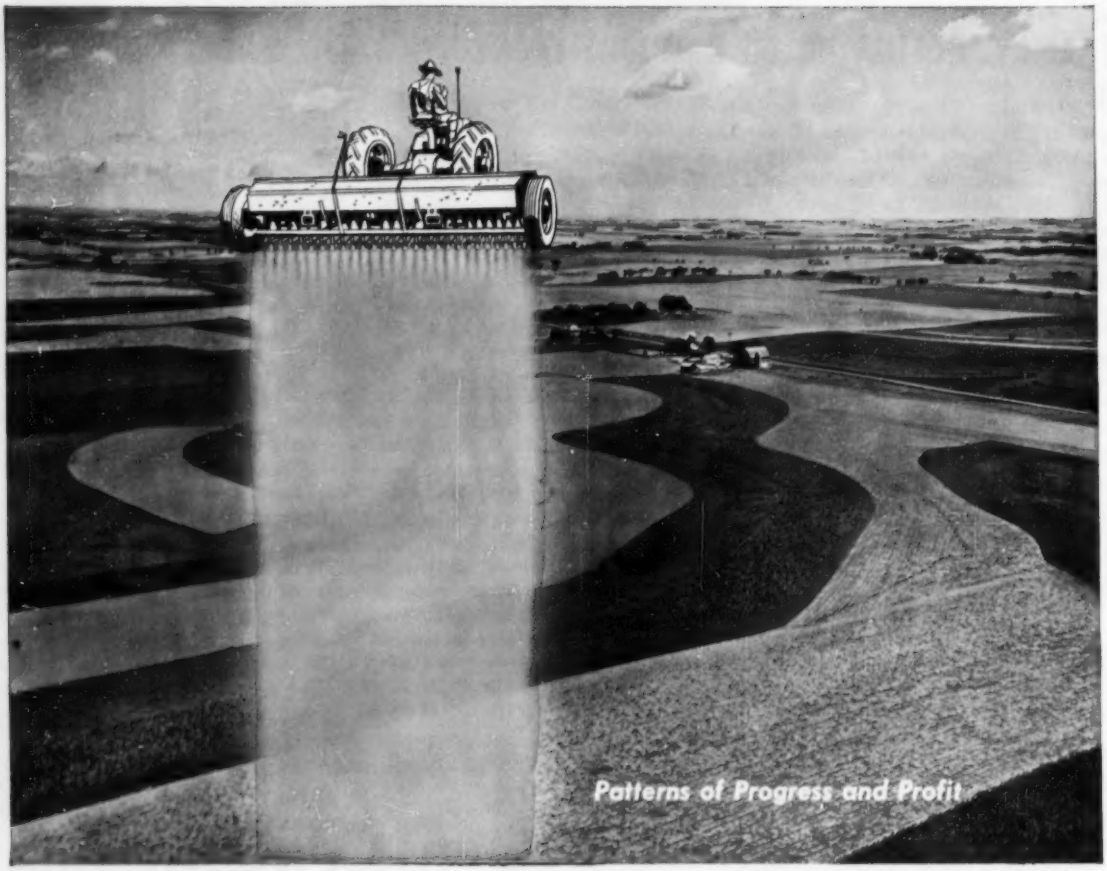
4:00 P.M. Directors' Meeting.

EVENING SESSION

6:30 P.M. Athens Country Club — Joint Banquet — Georgia Plant Food Educational Society—Georgia Section American Society of Agronomy, W. A. Higginbotham, Jr., Presiding.

Introduction of Guests.

Address—"Soil Fertility—the Basis of High Crop Production," Dr. George E. Smith, Professor of Soils University of Missouri.



(Photo—Courtesy Soil Conservation Service, U.S.D.A.)

High Grade Muriate of Potash

by DUVAL

Duval Muriate of Potash ranks high as one of the essential nutrients which greatly increase yield and profits in crop production.

DUVAL SULPHUR and POTASH CO.
Modern Plant and Refinery at Carlsbad, New Mexico

Address all communications to:
ASHCRAFT-WILKINSON CO.
Exclusive Distributors
ATLANTA, GEORGIA
Cable Address: Ashcraft

NORFOLK, VA. • CHARLESTON, S. C. • TAMPA, FLA. • JACKSON, MISS. • COLUMBUS, OHIO • DES MOINES, IOWA

Personals

Fred Neuman has become manager for **Red Star Fertilizer** at Sulphur Springs, Texas. He was formerly with **Oklahoma Fertilizer and Chemical,** Oklahoma City. He succeeds **Bill Tyler,** who has been made acting plant manager.

* * *

Richard H. Kube has been made manager of the Spokane division of **Balfour, Guthrie** with whom he has been associated since 1947.

* * *

A. A. Bayless has succeeded **Ralph Huffman** as salesmanager at **Blue Valley Fertilizer,** Marysville, Kansas. Both have been with the firm since its founding. Mr. Huffman has resigned.

* * *

Glenn H. Johnson, who has been with them since 1946, has been made assistant manager of Swift's Hammond, Indiana, plant.

* * *

Growers Fertilizer Coop., Winter Haven, Florida, recently held its annual election and named the following; **Norman A. Street,** vice-president; **Paul N. Simmons,** general manager and secretary; **R. L. Brumbaugh,** assistant treasurer. Directors: **F. K. Crum, B. R. Yarborough, Thirl Tew, R. A. Wells, Terry Spencer, F. Lynn McNeer** and **Dudley Putnam.**

* * *

F. W. Tunnell & Co., Philadelphia, announce the following appointments: **F. Harold Tunnell,** board chairman; **Donald S. Tunnell,** president; **Everett N. Angus,** vice-president; **Richard E. Deal,** secretary; **Weston L. Stratford,** treasurer; **Thomas A. Marston,** assistant secretary-treasurer.

* * *

Mr. & Mrs. **J. W.** (Jane and Jack) **Rutland** moved their residence on December 1st to #8 Club View Road, Asheville, N. C. Having changed locations several times recently, The Rutlands wish to advise their friends in the industry of the new address, which this time will be permanent.

* * *

E. S. Finley, secretary of **International Commodities Corporation** was appointed vice-president and elected as director of the company, it was announced by **Alfred E. Rosenhirsch,** president. Mr. Finley has been associated with the firm since 1948, and has been in charge of export sales since 1950. In addition to his regular export activities, he will now also be in charge of the company's expansion program.

* * *

Joseph C. Schumacher, until recently vice president and director of research of **Western Electrochemical Company,** has joined **American Potash & Chemical Corporation** as director of research, according to an announcement by **Peter Colefax,** president.

In his new capacity, Mr. Schumacher will direct all research activities of the company and its subsidiaries under **D. S. Dinsmoor,** vice president in charge of research and development.

The announcement said Mr. Schumacher will continue as a director of Western Electrochemical Company, located at Henderson, Nevada, in which American Potash & Chemical Corporation has a substantial interest.

* * *

Potash Company of America announces the appointment of **Shelton Appleton** as sales representative for Mississippi, Texas, Louisiana, and a portion of Arkansas, **W. H. Appleton,** southern sales manager located in

Federal Chemical Company has announced the election of two new vice presidents. John R. Sargent, left, vice president in charge of sales, and Sam E. Shelby, was elected vice president in charge of production.
Sargent has been general sales manager of the company for the past eight years. Prior to that he directed sales at four of the firm's six sales divisions.
Shelby has been general production manager for the past two years. He headed the company's engineering department prior to that time.

Breckenridge K. Tremaine who has joined Rhodia, Inc., New York as technical director of its industrial "Alamask" reodorant division. He was formerly with Du-Pont and since April has been on loan to Rhodia as acting technical director.

Virginia-Carolina Chemical Corporation has announced the transfer of William D. Barton, Jr., right, former manager of its Shreveport, La., sales office, to manager of its office at Montgomery, Ala. At the same time, James R. Campell, left, was promoted to manager at Shreveport.

Harold G. Brownson, vice-president of Irving Trust Company, who has been elected a director of Arkell & Smiths.

Atlanta, Georgia, will continue to work closely with him.

A native of Alabama, Appleton has had experience both in materials, mixed fertilizer and insecticide field; he may be contacted at 105 Preston Street, Shreveport, Louisiana, Telephone Number 8-2648.

* * *

Heath Steele, who has been head of **Southwest Potash Corporation** since its inception, has resigned as president and **Thomas W. Childs** has been elected to succeed him.

Leonard H. Lee now representing The Baughman Mfg. Co., of Jerseyville, Ill., as sales engineer in their eastern territory, which includes all states east of the Mississippi River except Wisconsin and Illinois.

Prior to joining Baughman, Lee served as Domestic Representative for R. G. Le Tourneau, and Sales Manager for P. A. Ross Machinery Co. In order to facilitate complete coverage of this large territory, Lee will fly one of the Baughman Cessna Planes.

"Farming Is A Way of Life" Says Grange—APFC Winner

David C. Faulkner, 14, Route 1, Kenton, Ohio, has been named the national winner of $500 in the 1954 Conservation Essay Contest sponsored by the National Grange and American Plant Food Council.

Faulkner's essay was judged the best of over 15,000 essays written by boys and girls in 48 states and Hawaii.

Describing the "balanced soil ration" for his farm and the methods used to increase yields of crops and improve the land, Faulkner summarized his essay by saying, "Our family feels it is a worth-while job to rebuild this farm, and to learn and earn while doing it. There is still much to do, and it will take a lot more hard work. As our Agricultural Agent said recently, 'Farming isn't just a way to make a living, it is a way of life'."

So. Atlantic

(Continued from page 54)

Emerson Collins, North Carolina Agricultural Extension Service, Corn; Dr. H. P. Cooper, South Carolina Agricultural Experiment Station, Cotton; Dr. G. W. Burton, Georgia Coastal Plains Experiment Station, Pastures; Professor W. W. Lewis, Virgina Agricultural Extension Service, Small Grains and Grass Silage Crops; and Dr. E. M. Dunton, Jr., Virginia Truck Experiment Station, Vegetables.

Presiding was E. W. Thomas, Booneville, Mo., President, Agricultural Ammonia Institute. At a luncheon given by Olin Mathieson Chemical Corporation, that company's motion picture on anhydrous ammonia entitled "Bigger Acres," was shown.

Conference arrangements were made by officers of the Carolinas-Virginia Anhydrous Ammonia Association: W. M. Campbell, Dixie Guano Co., Laurinburg, N. C., James C. Cook, Olin Mathieson, Williamston, N. C., and H. Alex Vann, Suburban Farm Service Co., Winton, N. C.

In his orientation remarks which

opened the conference, Jack Criswell, executive vice president of the Agricultural Ammonia Institute, predicted that North Carolina, the state which is the largest user of chemical fertilizers, will turn more toward nitrogen in the form of ammonia for direct application.

"Everywhere, farmers' acceptance of this new nitrogen fertilizer and field results have outdistanced research," Criswell said. "In the eight years since direct application nitrogen was first used in the Midwest, farmers have been reporting amazing increases in yields. Today's meeting will help determine where research can assist farmers to understand better the reasons for increased yields and ways to use anhydrous ammonia most effectively in the South Atlantic states."

In brief closing remarks, Dr. Smith emphasized the value of industry-education joint meetings to discuss nitrogen problems and opportunities.

OBITUARIES

William Ross Austin, 65, for 41 years in charge of chemical control division for Armour Fertilizer, died November 6 at Vanderbilt Hospital, Nashville, Tennessee.

Horace E. Graham, 68, who last July retired as president of Anglo-Lautaro Nitrate, Chile, died of a heart attack November 8 at his New York home.

Morton S. Hodgson, 65, president of Hodgson, Inc. (formerly Empire State Chemical Co.), Athens, Ga., died December 4 following a heart attack.

Henry Keller, Jr., 59, professor of agricultural economics at Rutgers College of Agriculture, died November 22 at his home in Plainfield, N. J.

Clinton Morris, Morris Testing Laboratories, Macon, Georgia.

Howard Sargent, 49, who operated Sargent Farm Service & Phosphate Fertilizer Co., died of a heart attack at his home in Saunemin, Ill., on October 25.

Around the Map

ALABAMA

Diamond Alkali early last month awarded to **Leonard Construction,** Chicago, the contract for rehabilitation and construction work on their Muscle Shoals chlorine-caustic soda plant, which they hope to have in production by the first of the year. Leonard originally built the plant for the government. It was declared surplus property late last year, and bought by Diamond in October. **Steve Puschaver** is plant manager.

ARKANSAS

Mathieson's plant at Little Rock was visited recently by the delegation from Greece, which is touring American industry.

CALIFORNIA

Brea Chemicals demonstrated a strong sense of public relations when, in announcing their new plant in Orange County, they released an interview concerning all that has been learned since Texas City about the safe handling of ammonia nitrate, of which the new multimillion dollar plant is slated to turn out 120 daily tons. **Jack Tielrooy,** development manager, was quoted in the local press as saying, "We don't believe it will be any more dangerous than properly handled gasoline."

The new plant, which will be near the existing plant at Brea, will go into construction first of the year and will be the largest ammonium plant in the western US, according to their report.

* * *

Stauffer Chemical has announced plans to expand their fertilizer manufacturing facilities at Vernon and Richmond. The first step in a program costing over $1,000,000 will be taken at Vernon, where a new plant will be built capable of producing approximately 500 tons per day of pelletized superphosphate and other modern ammonium phosphate fertilizers.

The first of its kind, the new facility employs a process developed and designed by Stauffer. It will be located adjacent to the company's large fertilizer plant at Vernon. Completion and initial production of the Vernon addition are planned for mid-1955.

Wilson & Geo. Meyer & Co., with headquarters at San Francisco and sales offices in Fresno and Los Angeles, California; Phoenix, Arizona; Seattle, Washington; Portland, Oregon; and Salt Lake City, Utah, will ace as exclusive sales agents for these new products.

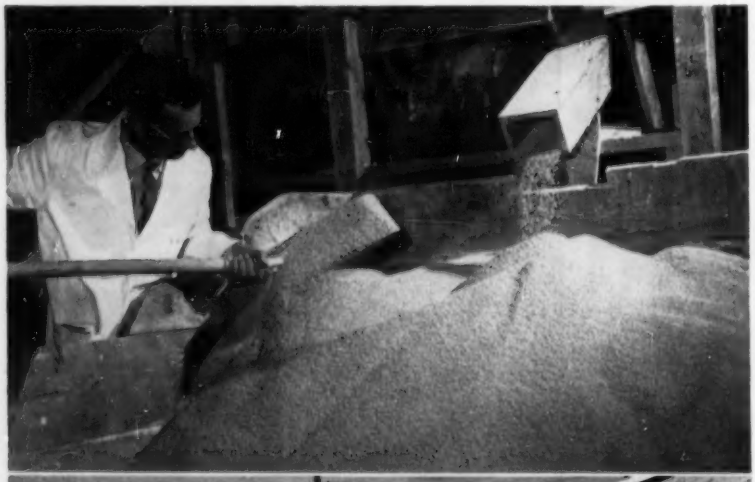
* * *

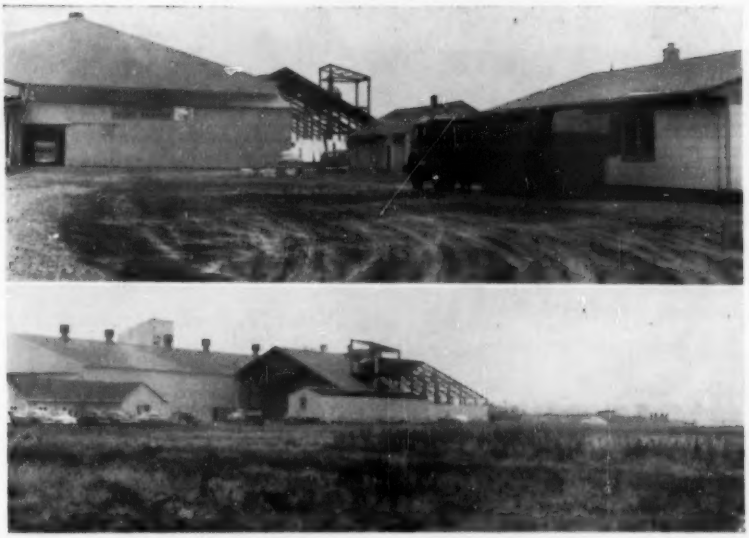
American Potash & Chemical's program to redesign containers for its products has been extended to the company's agricultural chemicals division.

First announcement that the redesigning program was under way was reported here last spring, when the 21 products manufactured at the company's main plant at Trona, were given a "new look." These included the company's four major heavy chemicals, potash, salt cake, soda ash and borax; Tronabor, Pyrobor, Borotherm, boric acid, bromine, lithium carbonate, sulfate of potash, muriate of potash and others.

Favorable reaction by company customers prompted an extension of the redesign plan to various divisions of the company, including the

Chemist Ed Ostergoard examines granular compound fertilizer produced at the research pilot plant of Canadian Industries (1954) Limited at McMasterville, Quebec, shown below. Following the current trend towards more concentrated granular fertilizers, the plant was designed and built to study the manufacture of these products. Believed to be the most advanced on the continent, the process uses a mixture of dry and liquid ingredients in such a way that chemical reaction promotes the formation of granules and their final dry condition. The new wing at the right was officially opened by Dr. E. W. R. Stacie, president of the National Research Council, on October 22, 1954.





Things were taking shape rapidly (despite a downpour of rain) on Buhner Fertilizer's new plant addition at Danville, Ill. when we stopped by to make this picture. The new section will house bulk loading facilities and provide additional storage area. Top view, taken from the plant driveway, shows approach to the new facilities; picture below, taken from the road beyond the plant, gives better indication of the size of the addition.

Eston Chemicals division which formulates insecticides such as Estonate, Aldrin, Dieldrin, Endrin and Estonox; organic phosphates including Alkron, Tetron and Malaphos; miticides such as Estonmite and Aratron; fumigants including methyl bromide, M-C-B, Bromofume, and E-D-Bee; and weedkillers and defoliants such as Tumble-Weed-25 and Tumbleaf.

Designing of the new group of packages for the company's agricultural chemicals was coordinated by **Al F. Swain,** sales manager for the agricultural chemicals division, and **W. J. F. Francis,** AP&C, Western general sales manager.

FLORIDA

Superior Fertilizer and Chemical, Tampa, has bought the assets of **Growers Fertilizer,** Fort Pierce, according to **G. D. Sloan,** Superior's general manager. **George Marrs,** with Superior since 1946, has been transferred to Fort Pierce to manage the acquisition.

Growers was established in 1932 by the late **J. E. Nobles** and since his death in 1950 has been managed by his son, **J. E., Jr.**

* * *

Foremost Fertilizer, Leesburg, suffered a $1200 fire recently.

* * *

International Minerals & Chemical are now shipping triple superphosphate from the new unit recently added to the Bonnie plant at Winter Haven. Production there runs at 200,000 annual tons according to **Howard F. Roderick,** IM&C vice-president.

ILLINOIS

Illinois Farm Supply predict deliveries in the Spring of the plant food to be produced at their Tuscola plant. In their "Patron's Guide" they published a story from which the following has been abstracted:

"The new plant, on which construction was started in June of this year, will produce **Gro-Flo** mixed plant foods in granular form for the first time, using the process developed at the Tennessee Valley Authority's pilot plant.

"Located on an 18 acre site just west of Tuscola, the new plant will consist of two main buildings, the manufacturing plant itself and an office building.

"The manufacturing and storage building will be 260 feet long by 148 feet wide. It will be of steel frame construction, with transite roof and corrugated asbestos siding. These materials were chosen because of their fire resistant characteristics.

"One side of this building will house the machinery and vats necessary to mix and prepare the high analysis **Gro-Flo** mixed fertilizers, and the other side will contain 13 storage bins each having a capacity of 600 tons.

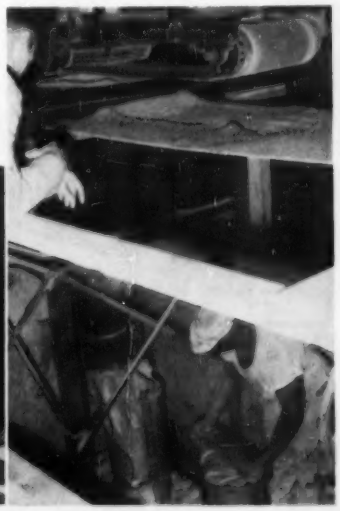
"Designed under the direction of the Engineering Department of Illinois Farm Supply Company to produce at a peak of 50,000 tons per year, provision has also been made for possible future expansion if and when such additional manufacturing capacity is needed. The **Blaw-Knox Company** of Pittsburgh, are prime contractors for the construction of the facility.

The administration building, which will also contain the maintenance department, will be a one story brick structure 100 feet long by 40 feet deep.

The new plant will have its own railroad siding trackage and will be served by the Baltimore and Ohio Railroad.

Adjoining the Tuscola facility is the huge plant of the National Petro-Chemicals Corporation. From this source Farm Supply will secure the sulphuric acid and nitrogen solution used in the fertilizer manufacturing process.

Fred Dye, Jim Taylor, John Dye, Jr., and Bob Schmidt watch will interest Kraft Bag Corporation's new bagger which had just been installed in the plant of Everglades Fertilizer Co., Fort Lauderdale, Fla. Fertilizer manufacturers attending the recent NFA convention in Hollywood, Fla. were invited to see the new bagger in operation. Fred and John Dye, and Bob Schmidt are with Everglades; Jim Taylor with Krift Bag.



The highly mechanized new plant, when in full operation, is expected to employ some 40 to 50 persons. During the construction, Illinois Farm Supply Company is represented at the site by **H. E. Causey,** who will remain as plant manager when the plant is put in operation."

* * *

Aylward Fertilizer, Sullivan broke ground the middle of last month in El Paso for the 40 x 114 one-story building which will produce 100 daily tons of liquid fertilizer. This is their second plant.

* * *

Coles Cumberland Service has opened a bulk fertilizer plant at Charleston which was financed by stock sale among farm bureau members. It has 1000 tons of storage capacity.

IOWA

Sidney C. Levine and **Robert H. Buth** have assumed the contract for purchase of sludge from the city of Des Moines, and plan to renovate the treatment plant and thus make it profitable.

* * *

Grant Stevenson and **Lewis Johnson** have announced a fertilizer plant for Burlington to be situated in a former Burlington Railroad shop. Authorized capital is $100,000. New equipment has been ordered and they expect to be in production this month. Mr. Johnson, who will be plant manager, has been in the business for a number of years. Mr. Stevenson has been with the Soil Conservation Service.

MARYLAND

Food Machinery & Chemical, San Jose, California, has set up plant and laboratory at Baltimore for a new division which will take over the pesticide and related production of **U. S. Industrial Chemicals** recently acquired. It will be known as **Fairfield Chemical.**

MINNESOTA

Soilbuilder, Inc., South St. Paul, has been sold to **Benson, Inc.,** Minneapolis.

* * *

St. Croix Liquid Fertilizer Co. has been incorporated at Stillwater by **Sheldon E. Smith, Oscar Flotten** and **Lyle J. Eckberg** to distribute anhydrous ammonia.

MISSOURI

Sale of the **du Pont Co.'s** St. Louis facility for loading, storing, and shipping cylinders of anhydrous ammonia was announced last month. The facility will be transferred on Dec. 31 to **Barada & Page, Inc.,** distributors of industrial and agricultural chemicals with headquarters in Kansas City, Mo.

The transaction following sale of a similar installation in Philadelphia last month, marks the withdrawal of du Pont from the cylinder distribution phase of the anhydrous ammonia business. Du Pont, however, will continue to produce anhydrous ammonia at Belle, W. Va., and has assured purchasers of the St. Louis and Philadelphia facilities of supplies to operate both businesses without interruption.

The purchaser also has been assigned by du Pont the right to use the 65-year old trademark, "National" anhydrous ammonia. A similar arrangement was made with the buyer of the Philadelphia installation.

Henry W. Krull, superintendent of the St. Louis facility, will continue with the du Pont Co. in another position. **George F. Hassfurther,** supervisor, will remain as superintendent of the St. Louis installation for Barada & Page, Inc., after the sale is completed. All other employes will be retained.

NEBRASKA

Lincoln Service & Supply, Inc., according to their president, **Howard Peterson** are expanding their Grand Island plant. Included in the program are complete new manufacturing facilities to produce granulated mixed fertilizers. The granulating process was developed by **The D. M. Weatherly Company,** Atlanta, Georgia, who are carrying out design and initial operations.

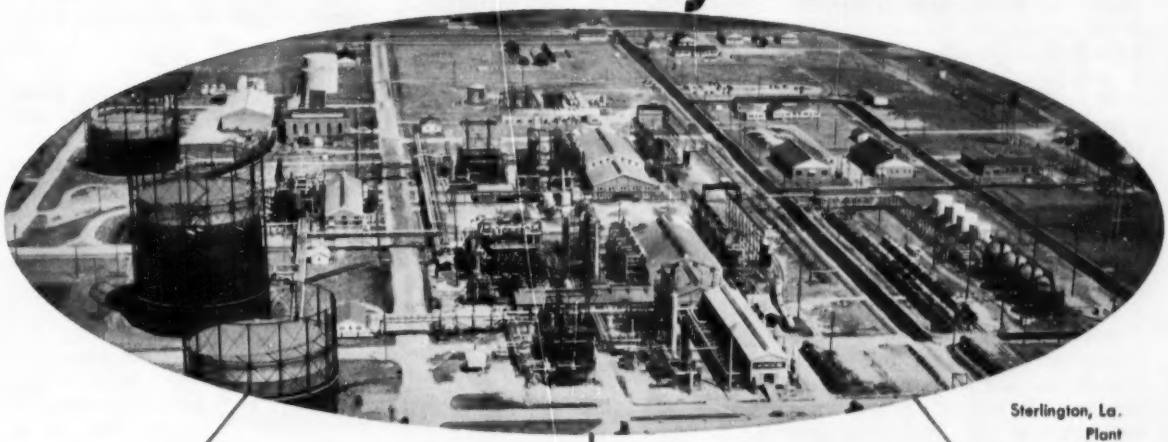
* * *

Wagner Mills, Inc., pioneers in distribution of dry fertilizer in Nebraska, are establishing a liquid nitrogen operation at their headquarters in Columbus.

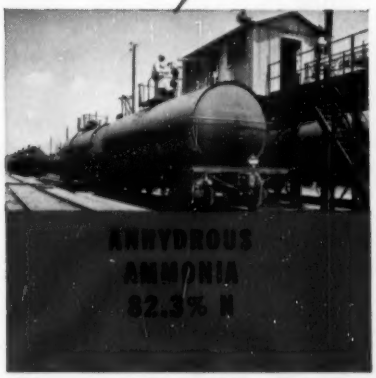
NEW JERSEY

I. P. Thomas & Son Company, Camden will become part of the **Pennsalt** organization as a new operating division as their stock-

CSC NITROGEN
in 3 Key Forms



Sterlington, La. Plant



ANHYDROUS AMMONIA
82.3% N

The most economical and concentrated source of nitrogen available as a plant food. As a fertilizer it is applied directly to the soil and through irrigation. It is widely used by the fertilizer manufacturer for ammoniating superphosphates and as a basic source of N in combined plant-food forms.

NITROGEN SOLUTIONS
CSC 101 — 40.6% N
CSC 102 — 40.8% N
CSC 103 — 37.0% N

Nitrogen solutions provide the lowest cost and most efficient media for quick curing of superphosphates. They supply more total N than any other ammoniating media. CSC Nitrogen Solutions offer the fertilizer manufacturer a wide range of physical properties to meet all requirements.

AMMONIUM NITRATE FERTILIZER
33.5% N

New, crystalline form made by CSC's exclusive Stengel Process (patent U. S. No. 2,568,901). New process assures low moisture, free flow, and excellent handling and storage characteristics. CSC Ammonium Nitrate Fertilizer is going to the farmer through leading fertilizer manufacturers.

AGRICULTURAL CSC CHEMICALS

260 MADISON AVENUE, NEW YORK 16, N. Y.

ANHYDROUS AMMONIA • NITROGEN SOLUTIONS • AMMONIUM NITRATE
BENZENE HEXACHLORIDE • DILAN • ETHYL FORMATE • METALDEHYDE

holders agree to a stock transfer plan. The Thomas company will continue in the fertilizer field, according to Pennsalt president, **George B. Beitzel.**

NEW YORK

GLF plans a new $800,000 fertilizer plant at Big Flats, according to **Charles N. Silcox,** general manager of the cooperative. In addition, $60,000 worth of granulating equipment is being installed at their Lyons plant, and new storage facilities are going into Lyons and Batavia, with added facilities for mixing, bagging and bulk loading. Another mixing unit is being built at Bridgeton, New Jersey, and new plants have been opened at Albany and Bridgehampton, and at Union City, Pennsylvania.

* * *

National Distillers, New York, is expanding its alcohol facilities in New Jersey and has authorized expansion of its natural gas reforming equipment at the Tuscola, Illinois plant, which will bring ammonia capacity to 60,000 annual tons by the middle of next year. **The Girdler Corporation** has been authorized to make the installation.

OKLAHOMA

Deere and Co. have gone into production with their $18,000,000 plant at Pryor, with a million dollar annual payroll. The plant, as our readers know is to produce 180 daily tons of ammonia and 275 daily tons of urea, and was built by **Wheeler.**

* * *

Monarch Fertilizer has moved into the Pryor industrial area, contracted with **Deere and Co.** for anhydrous ammonia, and set up 90,000 gallon storage tanks, which will be served by a 58,800 pound capacity tank truck, 44 feet long. **K. A. Schmitt** is president.

OREGON

Huges-Johnson Chemical Company, is building a superphosphate plant at Portland. A cone type continuous acidulator is being installed. The plant will have a capacity of 20,000 tons per year and plans to be in production this month.

Partners in this new firm are **J. Ross Hughes** and **Ralph W. Johnson.** Hughes is president of **Meeker-Hughes Company,** a fertilizer manufacturing firm of Salem. Both men will be active in the management of the new company.

PENNSYLVANIA

DuPont has sold its North Philadelphia anhydrous ammonia facility for loading, storing and shipping cylinders of anhydrous ammonia to **National Ammonia Co.,** Philadelphia. **Gosta Hallberg** will retire from DuPont after 26 years and become National's president. The "National" trademark, a DuPont property for 65 years goes with the transaction. (Also see MISSOURI).

* * *

Luria Engineering, Bethlehem, has established a university scholarship fund from which $4,000 will be annually awarded to sons of company employees seeking higher education.

* * *

Fire destroyed the 2½-story brick building housing the **Reading Bone Fertilizer Co.** at Ridgewood, five miles south of Reading, on November 23.

Firemen realizing it was impossible to save the main building, concentrated their efforts on keeping the flames from spreading. Officials were unable to determine the amount of loss.

TEXAS

Southern Fertilizer and Chemical, McKinney, has purchased the Stanley-Fogarty anhydrous ammonia plant at Allen, according to Malcolm Wilson, Southern vice-president.

* * *

Port Fertilizer and Chemical Company, Inc. has been granted 50-year-charter of incorporation at Los Fresnos, listing capital stock of $50,000. Incorporators: **Ruby T. Tandy, Clyde Tandy, Jr.,** and **Cleve H. Tandy.**

* * *

A branch factory of the **South Texas Anamo Company, Inc.,** will be built in Donna, it was reported by **O. A. Schuster,** president of the firm, which has its main offices in Garden City, Kansas. **Jesse Powell** has been named manager of the new plant, scheduled for completion shortly after the first of the year.

UTAH

U. S. Steel's $20,000,000 anhydrous ammonia plant at Geneva has moved nearer to ground-breaking as **Blaw-Knox** announced that it is nearing completion of the engineering design. Construction of the 200 daily ton plant is scheduled to begin early in the new year, and the plant should be producing in 1956.

* * *

Western Phosphates have announced capacity to double their Garfield phosphoric acid output, as a second concentrator is being installed. The plant originally was designed to turn out 90,000 annual tons of phosphoric, triple superphosphate and ammonium phosphate. General manager **John Paul Jones** says completion is scheduled for next Spring.

* * *

Calunite Corp., Altadena, California, announces that its plant at Marysville is in production, and that full production and employment of 100 will follow as distribution warrants.

(Continued on page 75)

Around The Map

(Continued from page 72)

Continental Sulphur & Phosphate Corp. of Dallas, Texas, has bought 50 percent of **American Sulphur & Refining Co.'s** solvent extraction plant at Sulphurdale, President **R. Dawson Hughes** announced last month:

AUSTRALIA

Sulphide Corporation the $3,500,000 superphosphate plant of **Proprietary, Ltd.,** at Cockle Creek, New South Wales goes into production this month, turning out 100 daily tons of sulphuric acid and some 2000 weekly tons of superphosphate.

AUSTRIA

Wiener Chemikalien Handelgesellschaft is building a plant at Krems in lower Austria to turn out 70,000 annual tons of sulphuric, for superphosphate production.

CANADA

Consolidated Mining and Smelting, Montreal, according to their vice-president, **William S. Kirkpatrick,** are seriously considering the establishment of a fertilizer operation in the Pacific Northwest. A site along the Columbia River in Oregon is reportedly being studied.

PHILIPPINES

Chemical Industries, Manila is planning a $250,000 plant which will originally utilize local phosphate rock, importing from the US as it becomes necessary.

Link-Belt Book Announces New Ball Bearing Trolley

An entirely new line of ball bearing trolleys for overhead conveyors is covered in Link-Belt Company's new 20-page book No. 2536. It contains specification data for the selection of new trolleys, or of replacement trolleys for existing installations.

Book 2536 includes application and maintenance information and a description of the attachments commonly used. There are 12 illustrations of typical overhead trolley installations.

Send for a copy of Book 2536 for more information, write LINK-BELT COMPANY, 307 N. Michigan Ave., Chicago 1, Ill.

CSC Adds 80 Lb. Bag To Ammonium Nitrate Line

Crystalline Ammonium Nitrate fertilizer made by Commercial Solvents Corporation, by the exclusive Stengel Process, is now available in 80 lb. as well as 100 lb. bags, according to an announcement by the Company's Agricultural Chemical Sales Department.

No change in style or appearance from the established CSC red, green, black and white design has been made in the new 80 lb. package.

Customer orders for CSC Ammonium Nitrate are now being filled in both sizes.

Fertilizer & Ag Workers Meet In Mississippi

Mississippi's annual meeting of Fertilizer and Agricultural Workers attracted a crowd of 200 to Biloxi October 27, 28 and 29.

T. M. Waller, extension agronomist, highlighted the program with a discussion of the progress made in the cotton production contest. One farmer, he pointed out, is raising better than four bales per acre this year by high-level fertilization and irrigation. More income will be gained from these four bales, he explained, than from eight bales grown under average production methods.

Banquet speaker Dr. Ben Hilbun, Mississippi State College president, reviewed agricultural progress in the state. Research and extension workers at the college sponsored a two-day Short Course.

PESTICIDES

Antibiotics Are Stopping Fire Blight

A pear orchard with only 1 fire-blight infection in every 6 trees looks quite different from an orchard with 9 infections per tree.

That's the contrast USDA scientists found when they checked unsprayed control plots against plots sprayed with antibiotics in an experiment his year. Streptomycin and mixtures of streptomycin and terramycin were the test materials.

ARS pathologists J. C. Dunegan, J. R. Kienholz, R. A. Wilson, and W. T. Morris conducted this experimental work with antibiotics. They were trying to determine the commercial feasibility of using antibiotics to control fire blight—one of the bacterial diseases that threaten pears. The experiment covered 600 Bartlett pear trees at Marysville, Calif.

Earlier research has included, besides spraying, direct injection of fruit trees with antibiotics (AGR. RES., March 1954, p. 10).

Exploratory tests at Beltsville, Md., in 1952 showed streptomycin was relatively non-poisonous to pear leaves. Small-scale field trials in 1953 in California and Oregon demonstrated that the antibiotic applied as a spray (at 100 parts per million) reduced fire blight, didn't russet the fruit, and caused only mild blanching or yellowing on some leaves.

Pathologists found this year that blight control obtained with 5 or 7 applications of the streptomycin-terramycin mixture (30 parts and 3 parts per million, respectively) was as good as results with tri-basic copper sulfate spray. Higher concentrations (100-10 and 60-6) were significantly better. It was at these highest concentrations that only 1 infection appeared in every 6 trees.

Dunegan estimated that 600 gallons per acre of the 30-parts-per-million spray, applied five times at 7-day intervals, would cost approximately $68 per acre per season (assuming an antibiotic cost of 20 cents per gram activity). Loss per acre from copper injuries in some California pear orchards is higher than this figure in most seasons. In these orchards, use of antibiotic material for blight control is commercially feasible.

To obtain the same results with three applications (at 14-day intervals) of 100-parts-per-million spray would cost $138 per acre per season.

For spray work, 38 grams (slightly less than 1½ ounces) of the antibiotic dissolved in 100 gallons of water gives a solution containing approximately 100 parts per million.

Little information is available on how antibiotics produce the results observed. Pathologists do know that the antibiotics are absorbed, move through the trees, and in some way prevent bacterial infections from becoming established.

Commercial feasibility of their use in western orchards will depend on the cost of the antibiotic materials in relation to the amount of fruit injury from present control practices.

From USDA's "Agricultural Research" for November.

DDT-Resistant Flea Beetles Pick Out Unsprayed Leaves

A flea beetle can tell whether or not a potato leaf has DDT sprayed on it and, given a choice, will pick the unsprayed leaf every time. In experiments conducted this summer by **Dr. James B. Kring,** entomologist at **Connecticut AES,** flea beetles in laboratory cages which contained both DDT-sprayed and unsprayed potato leaves, almost invariably fed upon the leaves unflavored with insecticide.

Dr. Kring is attempting to find the nature of the resistance of flea beetles to DDT, once highly effective in controlling this important potato pest.

* * *

Experiments covering a period of four growing seasons indicate that fewer applications of DDT with proper timing produce equal yields of potatoes at less cost, according to the latest bulletin #533 published by the **Maine AES** and prepared by **Dr. Geddes W. Simpson,** Head of the Department of Entomology and **Wayland A. Shands,** Entomologist of the Agricultural Research Service of the United States Department of Agriculture.

Poor Applications Cause Most Insecticide Failures

Approximately 70% of the insecticides sold in retail stores are wasted, according to **J. J. Davis,** head of **Purdue University's Entomology Department.** And the reason is not because insecticides are ineffective, but because the user fails to read the directions on the container that tell him how to use the material properly.

Observations made by **R. C. Dobson, New Mexico A. & M. College,** led him to emphasize recently the critical importance of applying pesticides only under favorable conditions. He regretted many growers have been inclined to place the burden of poor control on the insecticide used, when, in fact, numerous failures checked by his office had been proved to be due to poor application. Some common application faults discovered have been too little toxicant applied per acre, incomplete coverage of the field, poor or inadequate machinery, or careless application methods.

Out of the complaints investigated, a vast majority have been caused by the application of toxicants during periods of high wind, Dobson said.

CLASSIFIED ADVERTISING

For Sale, Exchange and Wanted Advertisements, same type now used, EIGHT CENTS a word for one insertion; TWELVE CENTS a word for two insertions; FIFTEEN CENTS a word for three insertions, and FOUR CENTS a word for each insertion more than three; ADVERTISEMENTS FOR THIS COLUMN MUST BE PAID IN ADVANCE.

CHEMICAL PROCESS ENGINEER: Experienced designer of fertilizer and agricultural chemical plants and processes. For large established engineering firm in this field. Send complete resume, past salaries. Southeast location. Box #4, c/o Commercial Fertilizer, 75 Third St., N.W., Atlanta, Ga.

WANTED: Position as superintendent. Have 28 years experience in the production of commercial fertilizers and superphosphate also sulphuric acid production by both the chamber and contact type plants. Married. Can furnish best of reference. Available at once. Box 5 c/o Commercial Fertilizer, 75 Third St. N.W., Atlanta, Ga.

WANTED: Job as Plant Superintendent in Georgia, not interested in other locations. Several years experience as Superintendent of Dry Mix and Acidulating Plants. Would consider job as Assistant under certain conditions. Am employed at present but desire change. Box #71, c/o Commercial Fertilizer, 75 Third St. N. W., Atlanta, Ga.

FOR SALE: Automatic batch mixing unit, including elevator, shaker screen, Bins. Complete, ready to run. Box # 50, c/o Commercial Fertilizer, 75 Third St., N. W. Atlanta, Ga.

STEEL TANKS for sale: (8) 15,000 gal. Vertical Welded Steel Processing Tanks with coils and Turbo agitator drive with 40 HP 3/60/220-440 gearmotor. Also (1) 150,000 gal. Steel Tank 35'D x 21'H. Perry Equipment Corp., 1428 N. 6th St., Philadelphia 22, Pa.

SITUATION WANTED: Chemical Engineer available. Age 32. Eight years experience including Production, Maintenance, Purchasing and Personnel. Box 49, c/o Commercial Fertilizer, 75 3rd St., N. W., Atlanta, Ga.

AGRICULTURAL CHEMICAL SALESMAN—educated, experienced, aggressive, prefer basic manufacturer, southeastern location, reply Box # 2, c/o Commercial Fertilizer, 75—3rd St., N.W. Atlanta, Ga.

VETERAN, COLLEGE GRADUATE, age 32, 9 years experience fertilizer production and sales desires connection with fertilizer manufacturer, materials producer or broker, Box # 3, c/o Commercial Fertilizer, 75 3rd St., N.W. Atlanta, Ga.

THE DOWD PRESS, INC. — CHARLOTTE, N. C.

OUR HOPE . . .

. . . that every year more and more of the sparkle and glitter of Christmas will come from the GOLDEN RULE. For, while it contains no carats, inches or feet, it is the standard measurement for all mankind.

POTASH COMPANY OF AMERICA

Carlsbad, New Mexico

General Sales Office . . . 1625 Eye Street, N.W., Washington, D. C.
Midwestern Sales Office . . . First National Bank Bldg., Peoria, Ill.
Southern Sales Office . . . Candler Building, Atlanta, Ga.

FERTILIZER MATERIALS

FOREIGN AND DOMESTIC

- INSECTICIDAL AND INDUSTRIAL CHEMICALS
- SULPHATE OF AMMONIA
- ORGANIC AMMONIATES
- SULPHUR & POTASH

SULPHATE OF AMMONIA

AMNICAL (AMMONIUM NITRATE AND LIMESTONE)

DUVAL MURIATE OF POTASH

Quotations on request.

EXCLUSIVE DISTRIBUTORS FOR DUVAL SULPHUR AND POTASH COMPANY

VEGETABLE OIL MEALS & FEEDSTUFFS

ASHCRAFT-WILKINSON CO.

Home Office

ATLANTA, GEORGIA

Cable Address
ASHCRAFT

Norfolk, Va.
Charleston, S. C.

Tampa, Fla.

Jackson, Miss.
Columbus, Ohio